THE
RAILWAY GAZETTE
A Journal of Management, Engineering and Operation
INCORPORATING
The Railway Engineer · TRANSPORT · The Railway News
The Railway Times · Herapath's Railway Journal · RAILWAY RECORD.
RAILWAYS ILLUSTRATED · ESTABLISHED 1835 · THE RAILWAY OFFICIAL GAZETTE

PUBLISHED EVERY FRIDAY
AT
33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1

Telegraphic Address: "TRAZETTE PARL., LONDON"
Telephone No.: WHITEHALL 9233 (6 lines)

Annual subscription payable in advance and postage free:

British Isles and Abroad .....£2 5s. 0d.
Single Copies .....One Shilling

Registered at the General Post Office, London, as a Newspaper

VOL. 74 NO. 15 FRIDAY, APRIL 11, 1941

CONTENTS

	PAGE
Editorials	413
Letters to the Editor	416
The Scrap Heap	417
Overseas Railway Affairs	418
The Eritrean Railway	419
The Abyssinian Railway	421
Automatic Arc Welding of Railway Wheel Tyres	424
Railway News Section	427
Personal	427
Transport Services and the War	430
Stock Market and Table	436

NOTICE TO SUBSCRIBERS

Consequent on further paper rationing, new subscribers cannot be accepted until further notice. Any applications will be put on a waiting list which will be dealt with in rotation in replacement of existing subscribers who do not renew their subscriptions.

Annual subscriptions are payable in advance and subscribers are advised to pay their renewal accounts before the expiration of the existing subscription, as the dispatch of copies will in all cases be stopped on expiration

DISPATCH OF "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE *possesses the necessary permit and machinery for such dispatch, and any reader desirous of arranging for copies to be delivered to an agent or correspondent overseas should place the order with us together with the necessary delivery instructions.*

We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas, as they are stopped under the provisions of Statutory Rules & Orders No. 1190 *of* 1940

TO CALLERS AND TELEPHONERS

Until further notice our office hours are:—
Mondays to Fridays - 9.30 *a.m. till* 5.0 *p.m.*
The office will be closed on Saturdays.

Railways in the Budget

SIR KINGSLEY WOOD'S second budget is unlikely to arouse enthusiasm in many quarters, but in some respects at least the Chancellor has shown willingness to learn from experience. Having at last recognised that increases in railway fares and charges give rise to an upward movement in prices, he is now considering how far the Exchequer may help in preventing a further increase, and presumably envisages a subsidy. Thus, after eighteen months of war, he is forced back to a line of thought which was put to the Treasury quite plainly when the financial agreement with the railways was negotiated. Presumably it is considered that the heavy increase in income tax, coupled with the cut in reliefs, will so impoverish large numbers of persons who normally form the travelling public, that an appreciable reduction in passenger traffic may be looked for, except that necessitated by business. Of course, further curtailment could be effected by increasing fares as was done in the last war. The Chancellor has also apparently been impressed by the obvious truth of the representations which have been made to him by industry as to the unfortunate effect of 100 per cent. Excess Profits Tax, and promises some modification in the tax, although the precise range of the changes is not revealed as yet. To the individual taxpayer, perhaps, the prospect of some reimbursement of income tax after the war may be a solace, though its value will depend upon the avoidance of further inflation. The generality of taxpayers can indulge any revenge complex they may harbour in the fact that the rate of income tax and surtax has now reached a maximum of 19s. 6d. in the £ on the heaviest slices of income, which suggests that we are at least approaching the limit of taxation. The Chancellor showed that in order to enjoy a tax-free income of £5,000 a year it would be necessary to have a gross income of £66,000 a year. In effect, in future no one can have an effective income of more than £5,000 a year.

* * * *

Railways and Port Congestion

The Select Committee on National Expenditure has issued a report on the handling of shipping at ports which points to the considerable responsibility in the clearance of ports which rests upon the Ministry of Transport. At page 430 we give extracts from the report dealing particularly with internal transport, but it is pertinent to note that most of the comments made by the committee are based on investigations some time ago and that their relevancy has been impaired by recent developments. Organisation of the ports, for instance, has improved considerably since the Regional Port Directors were appointed. Cessation of work during daylight alerts is now less common. New warning systems have recently been introduced and employees are encouraged to continue at work after the general alert and until a local warning is given. At one port the general alert covered 13 hr. 9 min. in 9 days, and during this time the men continued to work for 9 hr. 43½ min. The Ministry of Transport is aware of the need for railway wagons of special types to handle certain classes of imports, and is endeavouring to expedite their delivery. The curtailment of passenger traffic to free lines for the movement of goods and coal is under constant review, and has already been used. The institution of travel permits, suggested in some quarters, would require a good deal of machinery and would inflict a further strain on our limited manpower, besides adding further complication to the life of those who must travel, and who form the vast majority of railway passengers today.

* * * *

Ministry of Shipping Regional Appointments

The names of the three men appointed by the Minister of Shipping to be Regional Representatives, who will concern themselves with the speeding up of shipping in ports will inspire general confidence. They are Sir W. Reardon Smith for the Bristol Channel ports, Mr. J. R. Hobhouse for ports from Holyhead to Silloth, and Mr. J. C. Denholm for the Clyde area. No one could criticise these appointments on the ground that they were of men unfamiliar with the kind of problems with which they will have to deal. Mr. Denholm, a member of a well-known Clyde shipping family, will continue

XUM

to act as District Representative of the Ministry for Glasgow, and the other two men are prominent in their spheres. Last week the Minister emphasised the manifold delays which were bound to arise in war-time and reduced importing capacity, but practical shipping men should be able to do much to reduce these delays to the minimum. Of course they are not the concern of the Ministry of Shipping alone. Ports come within the control of the Ministry of Transport, since they are directly linked with land communications and, in order to secure the best results, there will need to be the closest co-operation between the two departments.

* * * *

War Damage Insurance Scheme

The War Damage Act, 1941, will come into operation on April 17 for businesses and agriculture and on May 1 for private goods. The schemes provided in that Act are three, of which the first relates to businesses, the second to farmers, and the third to private chattels. Separate legislation is to be provided for railways and other public utilities. Under the first scheme of the present Act manufacturers and traders will be able to insure their plant and machinery which is not rated with the building and their business equipment. The rate of premium from the beginning of the war to September 30 next is 30s. per cent. and traders with goods insurable under the scheme worth more than £1,000 are to be compelled to insure them. In general insurance is compulsory by whoever owns the goods or has to replace them should they be destroyed by enemy action. The Act requires insurance for the full value and manufacturers and traders would be advised to insure for the cost, less reasonable depreciation, of replacing the goods at the time of loss. In cases in which it is difficult to apply this basis of value the Board of Trade will be prepared to consider applications for arriving at a satisfactory figure. Cases of this kind should preferably be brought to the notice of the Board of Trade by a responsible trade association able to speak for the trade affected as a whole. The scheme will be operated through Lloyds and the insurance companies as agents for the board, and in general payment of compensation will be deferred until after the war. In the meantime interest will accrue at the rate of 2½ per cent. a year. It will be possible to obtain immediate payment of compensation on the grounds that the factories or works affected are vital to the national effort.

* * * *

Derelict Railways as Footpaths

At a recent meeting of the Liverpool Ramblers' Federation, a resolution was passed that the track of the derelict Welsh Highland Railway should be secured and made into a ramblers' route. It will be recalled that a similar suggestion was carried into effect a few years ago, when the Leek & Manifold Light Railway was abandoned, and the present proposal is on similar lines. If it is carried through it will give ramblers access to some of the finest scenery in North Wales. The Welsh Highland Railway begins at Dinas Junction, 3½ miles south of Caernarvon, and passes up the pretty valley of Gwyfrai to Bettws Garmon, where the great rocks of Mynddd Mawr become prominent. At Llyn Quellyn the scenery is wild, and the track passes near the house which was the inn of George Borrow's Snowdon Ranger. The station at South Snowdon gives easy access to a good route up the famous peak. The track then passes over the low ridge, and descends the Colwyn Valley, with a station on the hillside above Beddgelert. It gradually descends into the Glaslyn level, and crosses the river just above the gorge of Aberglaslyn, through the eastern wall of which it proceeds by tunnel. The route now follows the edge of the Traeth Mawr flat for about three miles, until it joins the older Cwm Croesor Tramroad, and strikes across the level for Portmadoc. The scrap metal of the Welsh Highland Railway is to be used for munitions.

* * * *

British Interests in Chinese Railways

In the course of his address at the ordinary yearly general meeting of the Hongkong & Shanghai Banking Corporation on February 26, the Hon. J. J. Paterson, Chairman, mentioned that the various railways—including the Shanghai-Nanking, Shanghai-Hangchow-Ningpo, Tientsin-Pukow, and Peking-Mukden—under the control of the Japanese-sponsored Central and North China Railway Companies were operating with fair regularity. The bondholders of all but one of these lines were, however, unlikely to receive consideration until political conditions changed. The exception was the Peking-Mukden Railway, and its loan (known as the Chinese Imperial Railway 5 per cent. Gold Loan of 1899), said Mr. Paterson, was still up to date with coupon and amortisation payments, and its earnings remained excellent. The only difficulty was that of the Manchurian authorities in obtaining sterling exchange. Some of the British railway staff, he mentioned, had been paid off, but their treatment was decidedly niggardly and caused considerable dissatisfaction. Meanwhile, Mr. Butler stated in the House of Commons that repeated representations had been made in respect of the other three railways mentioned above, requesting that arrangements should be made to meet the obligations of the British bondholders, and that the British railway staff should be allowed to function in accordance with the provisions of the loan agreements; he regretted, however, that no satisfaction had yet been received.

* * * *

Welding Worn Tyres

Ten years ago the building-up by arc welding of worn tyre treads and flanges was in what might be described as an advanced experimental stage on certain railways abroad, and the practice developed on a considerable scale, particularly in Germany and Italy, in succeeding years. Already in 1932 the Italian State Railways had an automatic welding plant in the shops at Florence capable of dealing with 2,400 tyres annually. Welding was applied at first only to wagon wheels, but latterly carriage wheels also were so treated, and even the wheels of locomotive tenders. At least one overseas railway was building up the tyres of certain locomotive wheels as long ago as 1933, but these were subject only to comparatively low speeds in service. It is obvious that such a method of repair, if it could be relied upon to give completely safe and satisfactory results in the arduous conditions of British railway operation, would effect considerable savings; but there have been certain practical difficulties which those responsible for the care of rolling stock in this country have viewed with misgiving. From an article on page 424 describing a new British automatic arc welding plant it will be seen that practically all the problems appear to have been satisfactorily solved, and although the plant has not yet been tested in practical application in this country on an extensive scale, it has for some considerable time past been in use in France, where the results are reported to have been entirely satisfactory. In view of the present necessity to save materials and labour, there would seem to be great scope for the practice of building up worn carriage and wagon wheels by this process.

* * * *

National Fuel for Rail Traction in Eire

Mr. E. C. Bredin, Chief Mechanical Engineer, Great Southern Railways, Eire, in a recent paper to the Engineering & Scientific Association in Dublin, stressed the point that locomotive building and repairing constituted one of the few heavy engineering industries in that country. Duties were imposed in order to foster other home production, but the steam locomotive industry was established and needed no duties for its protection. Moreover, the home-produced steam locomotive was the simplest and most flexible unit of traction, and Ireland was fortunate in being so favourably situated with regard to the finest steam coalfields in the world. Not that the locomotive would necessarily continue to be dependent upon this coal, for a practical means of using indigenous fuels, such as peat and anthracite, might be evolved. Mr. Bredin referred to the Great Southern's four articulated two-coach Drumm-battery trains running on suburban services as providing a service comparable with that of direct electric traction, without the heavy initial cost of electrification. These trains were the only railway traction units in Ireland running a regular service on national fuel.

War Transport Council

LAST week-end it was announced that the Minister of Transport had decided to set up immediately a War Transport Council whose function it will be to advise him on matters of transport policy. In addition to examining all matters which may be referred to the council by the Minister its members will be invited to put forward proposals which, in their view, would increase the contribution that transport is making to the war effort. As will be seen from the official announcement which is reproduced at page 430 the council consists of representatives who have knowledge of the various sections of the transport industry, although they have been appointed in their individual capacities and not as representatives of particular sections of the industry. We are informed that it is intended that it should meet regularly and frequently—it is suggested that in its early stages at least it should meet once a week—and its first meeting is to be held next Thursday. The council is intended to embody and to give expression to the changed conception of the purpose of transport in the war. The Minister's idea is that the council will advise in formulating proposals for the transformation from a mass of individual organisations catering for peacetime activities whether of business or pleasure, to a single great instrument of total war. To do this the Minister proposes that all forms of transport shall be co-ordinated from a strategic point of view, that to this end the War Transport Council will be related to the transport industry in much the same way as the Board of Admiralty, the Army Council, and the Air Council are to the fighting Forces. The positions are not quite analogous, however, as the War Transport Council is only advisory, whereas the others are executive bodies. Its primary work will be to ensure the full employment of transport in the conduct of war so that it may fulfil its strategic task swiftly and effectively with each branch of the industry supporting and supplementing the others.

At first sight it might arouse surprise that this juncture in the war should seem a suitable time to add to the bureaucratic burdens of the country. So far in the present struggle the Ministry of Transport has been prolific in its creation of committees. The War Transport Council adds yet another to their number and no doubt will add its contribution to the absorption of time and paper which one might almost suppose to be the primary purpose of bodies of this kind. How far and on what lines one can hope for progress towards the pious end of a complete co-ordination—a word which, in relation to transport, is beginning to occasion much the same reaction as did " rationalisation " in another connection some time ago—it is difficult to envisage at this early date. Perhaps the Minister will have some ideas of his own or of his advisers to lay before the council when it has become established. In view of his present powers and the organisations already in existence it is not quite clear why he should deem it necessary to create a body of this kind to consider suggestions of his own, unless, of course, he wishes to obtain participation in his responsibilities. The War Transport Council is to be an entirely advisory body, and presumably it is for this reason that the Minister sees no objection to directors of transport undertakings sitting upon it. It will be recalled that when the directors of the Great Western Railway Company decided to offer Sir James Milne a seat on their board the Minister intimated that he could not see his way to accept a director of the railway company as a member of the Railway Executive Committee appointed by the Minister to act on his behalf in connection with the control of the railways by the Government. Apparently, too, the Minister did not then and does not now feel that his ban should be other than selective, for the R.E.C. is not entirely bare of representatives of the directorates of controlled railways.

How far the functions of the new body will impinge upon the work of the Railway Executive Committee it is impossible to say at the moment, but obviously its reaction, if any, will be indirect and by way of advice to the Minister who would, if he saw fit, issue directions to the R.E.C. The work of the Railway Executive Committee has been very arduous since the outbreak of war and is not likely to be made easier by the presence of a new body with the ear of the Minister. The Railway Executive Committee as constituted during the last war is considered by some to have worked better than the present body. It may well be that this was largely because the Ministry of Transport had not then been created. During the last war the Railway Executive Committee was responsible to the Board of Trade and was recognised by the Board of Trade as a body of experts called upon to perform a task, and to a large extent left to itself as to the best means of achieving its object. In the present struggle it has been demonstrated very clearly that a superfluity of experts, whether bodies or individuals, makes for a weakening instead of a strengthening of constructive policy, and its execution. The Ministry of Transport must by now have at its disposal all the theoretical talent that exists in relation to the subject with which it deals, even though it does not share with the Board of Trade the distinction of numbering the Archbishop of Canterbury among its *ex-officio* members.

* * * *

Herbert Nigel Gresley

THE passing of Sir Nigel Gresley deprives the railway mechanical engineering profession of one of its most distinguished personalities. His long association with locomotive and rolling stock design and the responsible positions he held in the course of his career, leading to that of Chief Mechanical Engineer of a great British railway, provided him with ample scope for the exercise of his outstanding abilities. It is beyond dispute that Gresley's success was due largely to the enterprise he displayed in the conduct of the affairs of the department he controlled and the energy and courage with which he tackled the many difficult problems that must always confront one occupying the position of Chief Mechanical Engineer. It was said of him, with truth, that he was always ready to give consideration to new ideas emanating from outside the railway, and that, where such ideas impressed him as being worthy of it, he did not allow any hidebound notions to stand in the way of their investigation and, in many cases, trial. It was here that his resolute character stood him in good stead, and to this must be added the fact that some of the most successful features of design associated with the locomotives of the L.N.E.R. were the product of his own inventive genius. His strong advocacy of three-cylinder single-expansion propulsion was based on the practical experience of tests which he described in a paper to the Institution of Mechanical Engineers in 1925; but he contended that something in the way of a specially-designed conjugated valve motion was preferable to the system of providing each cylinder with its own individual motion, and to this may be attributed the introduction of the Gresley gear, which is fitted to some hundreds of locomotives on the L.N.E.R. Nevertheless, the success of his own design did not prejudice his trial of other gears, as witness the numerous three-cylinder 4-4-0 locomotives fitted with poppet valves which continue to give reliable service on the northern sections of the line.

Gresley was a great believer in the principle of the big boiler, including, where possible, the use of a wide firebox and large grate area; he also gave much attention to the question of cab comfort and often discussed this and other kindred matters with the enginemen themselves. Nothing was too much trouble to him if in the end it might lead to some improvement in the locomotive, and it was this ceaseless activity on his part that led to his promotion of the plan for setting up a stationary locomotive testing plant. His advocacy of this scheme was strengthened as a result of the tests on his 2-8-2 express locomotive *Cock o' the North* which were carried out on the Vitry plant at Paris in 1937. These tests indicated certain features of the new engine susceptible of improvement, and the subsequent locomotives of the class were modified accordingly. But for the interference of the war this advocacy would by now be nearing fruition by the completion of the plant which was in course of construction jointly by the L.N.E.R. and the L.M.S.R. Reference must be made, in mentioning major experiments, of locomotive No. 10000, with its Yarrow water-tube boiler carrying a

XUM

pressure of 450 lb. per sq. in. This engine, originally constructed in 1929 as a four-cylinder compound, with the idea of securing reduced coal consumption, was converted in 1937 to a three-cylinder simple with a standard boiler as fitted to L.N.E.R. Pacifics, which, with modifications to the valve setting indicated by comparative tests with Great Western locomotives, were by then giving highly successful and economical service. Gresley's further development of the Pacific type bore evidence, in their internal streamlining, of his observation of French locomotive practice.

In the meantime the call had come for higher speeds, and Gresley had responded with trial runs which showed that his earlier Pacifics were capable of putting up performances which hitherto had been regarded as beyond the normal capacity of standard locomotives. The faster travel required by the Operating Department to attract additional traffic demanded sustained speed in so high a range as to justify external streamlining. How successful were Gresley's modifications is shown by the fact that one of his streamlined Pacifics, *Mallard*, attained on test a momentary maximum speed of 126 m.p.h., the highest reached in Great Britain, and probably a world record for steam. A contribution to this achievement was the use of alloy steel to lighten the moving parts, a practice introduced by Gresley with his fine "K3" 2-6-0 mixed traffic engines. When the decision was reached to run trains non-stop between London and Edinburgh, Gresley built corridor tenders to enable engine crews to be changed on the way. Among other notable experiments may be mentioned the use of the locomotive booster which Gresley fitted experimentally to various types of locomotive. Although successful, experience showed that, except for such locomotives as hump shunters, the additional complication and expense of the boosters was not justified in British practice. The last notable innovation made by Gresley was the fitting to one of his latest 2-6-2 general utility locomotives of a Nicholson thermic syphon. Gresley was present at the recent exhibition at York of the first of these new locomotives, and the recollection of our long conversation with him is now saddened by his death.

Gresley had been Carriage & Wagon Superintendent of the Great Northern Railway until he assumed authority over the whole of the Locomotive, Mechanical & Rolling Stock Department on the retirement of H. A. Ivatt, and he always took a lively interest in the design of rolling stock. His enterprise was exemplified in the double-bolster bogie which he designed and standardised for use on passenger vehicles. Although this type of bogie was rather more elaborate and costly than the more orthodox design, it was justified by the very steady running it gave and its thoroughly satisfactory service. The articulation of vehicles was another innovation of his, and not only economised considerably in total tare weight by making three bogies do the work normally allotted to four, but was of great value in economising the length of trains, particularly those used on suburban services where platforms and terminal arrangements were short, such as those in the City of London. Another advantage of the articulation principle was shown in the remounting of two or more coach bodies, formerly carried on six wheels, on three or more bogies, thus bringing them up to comparatively modern main-line standards. The internal comfort of modern L.N.E.R. main-line stock is well known, and where luxury accommodation was called for, as in the high-speed streamlined trains, Gresley did not hesitate to call in the decorative and furnishing experts, with results shown by the wide patronage these special trains commanded.

We would end this tribute on a personal note: we had the acquaintance and, indeed, the friendship of Sir Nigel for many years and received from him a great deal in the way of assistance and collaboration in connection with articles for THE RAILWAY GAZETTE on locomotives, rolling stock, and machine tool developments. He gave us the fullest facilities for visiting the company's works and a good deal of encouragement and help in the preparation of the articles resulting from these visits. Everywhere we went we found that he was held in high esteem by those working under his direction and that the admiration felt for his administrative and engineering abilities was accompanied by an affectionate regard for him as a man as well as a chief.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents.)

"Engines for Stopping Trains"

London, April 1

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The humour of your correspondent "Gone," at the expense of your heading "Engines for Stopping Trains," goes rather wide of the mark. His thesis is that the stopping of a train is exclusively a function of the signalman and that the engine has nothing to do with it.

Some time ago *Punch* had a picture of an old lady speaking to a porter at a wayside station as an express roared through. "Doesn't that train stop here?" she asks. "No, lady," he replies, "it don't even 'esitate."

Useful as the signalman is for indicating when and where a train ought to stop, one cannot help feeling that he might signal till he was black in the face and still the train would not stop—nay, it wouldn't even hesitate—unless some co-operation were forthcoming from the engine.

I am, Sir, your obedient servant,

"BETWEEN THE LINES"

Frost and Electric Railways

Meteorological Station,
Goff's Oak, Herts
April 7

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Further to Mr. C. E. R. Sherrington's letter in your issue of April 4, it is not generally realised that the American definition of sleet is very different from the British. The British meteorological conception of sleet is a fall of partially thawed snow or of rain and snow together. International symbol ⁂.

The American conception is a fall of rain (or sleet) falling on ground, building and other structures *the temperature of which is considerably below the freezing point*, resulting in the immediate freezing of the liquid drops to form a coating of clear ice on all surfaces on which it is deposited. The British meteorological term for this phenomenon is "glazed frost." International symbol ∼. Glazed frost usually occurs when a warm, moist wind suddenly sets in over an area which has previously been chilled by radiation during an anticyclonic spell.

Fortunately in this country the change from anticyclonic to cyclonic conditions is seldom sufficiently sudden for the formation of glazed frost, and furthermore, winter anticyclonic conditions frequently are accompanied by a sheet of stratus cloud which effectively checks night radiation. On the American Continent however, deep cyclonic depressions may often form over the Great Lakes in winter and move rapidly south-eastwards, displacing the anticyclonic air mass over the eastern States, accompanied by heavy rainfall which immediately freezes on contact with the surface, producing heavy ice deposits, or, in American parlance, heavy sleet.

In this country glazed frost is comparatively rare. In the five years ending August 31, 1939, at this station glazed frost has been observed on only four days, against a corresponding figure of thirty days with sleet.

DONALD L. CHAMPION, F.R.MET.S.

City & South London Railway

36, Victoria Street,
London, S.W.1
February 19

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I read with much interest the article on the Jubilee of the City & South London Railway, published in the December 13 issue of THE RAILWAY GAZETTE. I knew a good deal of its early stages as I worked under Dr. John Hopkinson and George A. Grindle, who both played important parts in the beginnings of electrification. I remember there was much trouble with the brushes and George Grindle devised

a carbon brush in which pieces of arc lamp carbons were used, held in a tube with one quarter cut away to expose the carbon ; the carbon lay lengthwise to the commutator. These brushes greatly improved the running of the motors. This, I believe, was one of the earliest examples of the carbon brush for traction motors.

J. S. HIGHFIELD

[We take this opportunity of correcting two small errors in our article, to which a correspondent has drawn our attention. The date on which the original King William Street terminus (constructed with a single line of rails and two platforms) was altered to an island-platform type station was December 22 (not 12), 1895. On our sketch map the reference key showed the section between Moorgate and Angel in the symbol of lines opened in 1900, and that from the Angel to Euston in the symbol of 1901 ; actually (as correctly indicated in the text) the openings were from the Borough to Moorgate on February 25, 1900, thence to the Angel on November 17, 1901, and thence to Euston on May 12, 1907.—ED.]

THE SCRAP HEAP

The rate of income tax and surtax will reach a maximum of 19s. 6d. in the £ on the heaviest slices of income, a figure, indeed, approaching the sphere of limit of taxation. In order to enjoy a tax-free income of £5,000 a year it would be necessary to have a gross income of £66,000 a year, and very few people today have incomes approaching that sum.—*The Chancellor of the Exchequer announcing tax changes in the Budget Speech on Monday last.*

* * *

A WAITING LIST

Consequent on further paper rationing, new subscribers cannot be accepted until further notice. Any applications will be put on a waiting list which will be dealt with in rotation in replacement of existing subscribers who do not renew their subscriptions.—"*The Railway Gazette*," *June* 7, 1940.

The management of *The Times* has instituted a waiting list of those who desire to purchase the paper daily and are unable to do so. Immediately copies become available they will be allocated in strict order to those on the list through their newsagents. Communications should be addressed to the Publisher of *The Times*, Printing House Square, London, E.C.4.—"*The Times*," *April* 7, 1941.

* * *

AN INDUSTRIALIST'S VIEWS ON BRITISH RAILWAYS

Below are a number of extracts from an interesting article in *The Sunday Times* for April 6, by " An Industrialist " :—

Towards the end of the 1914-18 war there was much talk about nationalisation of the railways; if memory serves me right it was proposed by one eminent Minister in his address at the General Election of 1918. When the election was over little was heard of it.

Now, during another term of wartime State control, the proposal is revived, though in different form and with wider sweep. Nomenclature changes, and " unification " is now preferred to " nationalisation." Since 1918 the road-carrying services have vastly developed, and these it is proposed to bring under the same control as the railways.

The Ministry of Transport is credited with the desire to carry this immense project through Parliament in the near future—while war is raging. This ought not to be permitted.

At the beginning of the war the railways came under the control of the Minister of Transport, and he wisely put an executive committee in charge. A veteran railwayman—an ex-general manager—is chairman, and he presents the views of the committee to the Ministry.

Subject to the direction of the Minister and the shadowy oversight of Parliament, the Civil Service controls the transport organisations of the country.

The railwayman approaches transport problems from a standpoint long fixed: that he has the right and obligation to carry passengers or goods between any two points in the kingdom. The law of the common carrier governs his outlook.

Standing somewhat apart from the rest of the community, the railwayman is a very fine type, regular in his work, loyal, often descended from railway families. He has watched traffic pass from the railways, he has suffered deductions from his pay, and he believes that these things have not come about from any fault of his own. That is the feeling from top to bottom of the service.

Brought up in the old monopoly conditions, the railwayman has not realised, or has been slow to realise, that his methods of working are out of date. He has, indeed, something of the isolation of the civil servant and, though he shows administrative ability on his own ground, one would not turn to him for innovation.

There have been some outstanding examples of enterprise. The Southern Railway, which used to be a byword of drabness and incompetence, is now a model of brightness and efficiency. And old-established traders have not forgotten the go-ahead methods of the Midland Railway when it was keenly competitive with the older companies and had to fight for traffic and passengers. The Midland worked traffic forward in very small train loads to make connections with long-distance express freight trains. For its passengers it provided comfort—Midland for Comfort was its slogan. Its restaurant and hotel service, developed by the Towle family, was without rival.

In recent months of daily and nightly raids all grades of the staffs have shown conspicuous resource and courage in maintaining services, often under unfair criticism to which the exigencies of war did not permit them to reply.

There has since been valuable experience of the working of great public utility concerns—notably the Port of London Authority, the London Transport Board, and the Central Electricity Board.

Where are we to find the man to direct, inspire, animate such an immense undertaking?

It is not a job for a civil servant. Nor does one think of a lawyer or accountant at the top. The railwayman, with habits and traditions formed in the old days of rail monopoly, lacks imagination.

Yet if the chief executive official of the British railways knows nothing of railway management he will not get the best out of the railway officials who must be his instruments.—*From " The Sunday Times "*

* * *

SIR NIGEL GRESLEY'S CANAL

" An Act to enable Sir Nigel Gresley, Bart., and Nigel Bowyer Gresley, Esq., his Son, to make and maintain a navigable Cut or Canal from certain Coal Mines in Apedale, to Newcastle-under-Lyne, in the county of Stafford " received the Royal Assent on April 13, 1775 (15 Geo. III, cap. 16). This Act authorised the construction of a canal to convey the produce of the extensive Gresley coal mines in Apedale, Staffordshire, and bound the proprietors for 21 years to furnish the inhabitants of Newcastle-under-Lyne with coal at 5s. a ton of 20 cwt. ; then at 5s. 6d. a ton for a further 21 years. The proprietors bound themselves, under penalty of £40 for each offence, to keep a supply of coal sufficient for the consumption of the town at a wharf in or near it. Joseph Priestley's " Historical Account of the Navigable Rivers, Canals, and Railways, of Great Britain " (1831) said : " There are few private works of more real utility to the public than Sir Nigel Gresley's Canal, which has added considerably to the interests of the inhabitants of Newcastle, by the regularity wherewith they are supplied with coal at a moderate charge."

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

ARGENTINA

Road Transport of Grain

Some interesting statistics relating to the proportion of grain traffic conveyed by road vehicles during 1939 are contained in a report issued by the National Grain and Elevators Board, which states that a reduction was recorded in the percentage of grain transported by road to all the ports, with the exception of Quequen. This reduction is attributed to the fact that most of the wheat proceeded from zones located at considerable distances from the ports of shipping, over which lorries cannot compete on equal terms with the railways.

As regards Quequen, of the 476,393 tons conveyed to this port, 72·6 per cent. was carried by lorries. The report states that the zone of operations of these vehicles extends to a distance of 150 km. from the port, and it is officially admitted that different tariffs are applied, to the detriment, on the one hand, of transport from the farms to the stations, while favouring transport from the farms to the ports.

Lower Lorry—Rail Ratios

The proportion of lorry-borne grain discharged at Mar del Plata, which for some years had shown an upward trend, declined in 1939. Nevertheless, of the total of 163,608 tons unloaded at this port, over 78 per cent. was carried by lorries, which compete successfully with the railways over distances up to 120 km.

Of 987,868 tons of grain discharged at the port of Santa Fé during 1939, only 22·9 per cent. was road hauled, a substantial decline as compared with 1938, when the proportion was 44·9 per cent. The heaviest reductions were in maize and linseed, which declined from 42·1 to 33·4, and from 66·6 to 52·6 per cent., respectively. In this district the zone of competition fluctuated between 150 and 200 km.

Rosario received by road a larger amount of grain than any other port—394,052 tons—but the proportion of the total tonnage discharged at this port was amongst the smallest, being only 10 per cent. Competition extends up to a distance of 200 km., mainly in a westerly direction, especially for maize, which is frequently carried in bulk.

Owing to lack of facilities for discharging from lorries at the ports of Ingeniero White and Puerto Galvan, the use of such vehicles is restricted to Arroyo Pareja and the National Mole at Bahia Blanca, in which zone competition is confined within a radius of approximately 100 km.

The percentages carried by lorries during 1939 to the river ports of San Nicolás and San Pedro, situated on the Central Argentine Railway, although still high, dropped from 40·3 to 23·4, and from 83·2 to 63·9 per cent., respectively, as compared with 1938. The foregoing figures show—although the report is discreetly silent on the point—the serious inroads being made into the railways' most valuable source of revenue by means of competition, mostly of an unfair nature, rendered possible by the fact that the road transport concerns have the option of picking and choosing the traffic which it best suits their interests to convey within certain selected zones; whereas the railways are compelled by law to accept everything which is offered, regardless of profits or distances.

CANADA

Two More Sections of Line Closing

Application of the Canadian Pacific Railway to discontinue operations on a 22-mile section of line between Landon and Irricana in Alberta was granted in a judgment of the Board of Transport Commissioners made public on February 28. A similar action by the Canadian National Railways to abandon operations on a 10-mile section between Irricana and Beiseker also was won. In declaring judgment the board said it believed a joint net saving of $29,302 made possible by the judgment would outweigh the "inconvenience occasioned by abandonment." The board also made provision for construction of a "connection between the main track of the C.P.R. at Irricana and the grain elevator tracks of the C.P.R. at Irricana aforesaid" to serve country grain elevators and the existing loading platform on the C.N.R. line at Irricana.

C.N.R. Likely to Pay Expenses and Interest in 1941—42

Indication that the Canadian National Railways for the first time since 1927 are earning enough to pay all their operating expenses and interest charges on debts owed the public was given in the main estimates tabled in the Canadian House of Commons, for the fiscal year 1941-42. The estimates were without the usual appropriation for the Canadian National Railways deficit, and contained a note to the effect a $15,000,000 item included in the last estimates was not required for 1941-42.

The annual report of the C.N.R. will be tabled in the House shortly, and will show the financial position of the system at the end of 1940 and profit or loss for the year 1940. In 1939 the system had a net income deficit of $40,000,000 and in 1938 was in deficit to the extent of $54,000,000. By the time the estimates for 1940-41 were prepared, however, railway revenues were coming in so satisfactorily that the deficit for 1940 was estimated at $15,000,000. The annual report will show whether and to what extent that sum was required to meet a deficit in the calendar year 1940, but the absence of any appropriation in the estimates tabled shows that no deficit is expected in 1941.

UNITED STATES

Soya Bean Demonstration Train

The Baltimore & Ohio Railroad inaugurated a special train on February 24, to tour 50 centres in Indiana and Illinois, with the object of advocating more widespread use for the soya bean, already a major crop in the Middle West. The train consists of six cars, and its staff, under the B. & O. Manager of Agricultural Development and agronomists of Ohio, Purdue and Illinois Universities, lectures on the raising, marketing, processing and uses of soya beans, a special travelling cookery school being included in connection with the latter. Displays show the stages of growth and finished products of the bean in the home and in industry.

WESTERN AUSTRALIA

Water Difficulties

As a result of exceptionally light rainfall during the winter of 1940 the water position in the south-west of this State is acute, and the carriage of water by rail for domestic and railway purposes has become imperative. Apart from areas served by the pipe lines from the coastal zone to the Eastern Goldfields, country districts are dependent upon reservoirs constructed by building catchment dams, and many of these have failed to fill this year. There was good rainfall along the main Eastern Railway in December, filling a number of the railway reservoirs, but the Great Southern District has fared particularly badly, and the reservoirs at the important centres, Wagin, Narrogin and Katanning—where locomotive demands exceed 400,000 gallons weekly—are now dry. Haulage of this quantity of water becomes increasingly heavy as the nearer supplies give out.

Rising Passenger Traffics

Passenger traffics are rising steadily due to the depletion of private stocks of petrol—resulting from higher cost and rationing—restricting road travel. Diversion of coastwise shipping traffic to the railway is also boosting transcontinental passenger traffic as is also the interstate movement of defence forces. Special trains are being run, but the Kalgoorlie—Port Pirie section is taxed to capacity. Excursion traffic at Christmas and the New Year has also been heavy and is expected to be maintained throughout the summer.

SWEDEN

National Defence Train

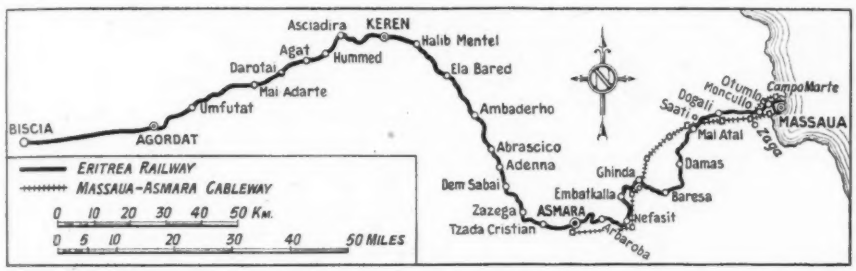
The Swedish State Railways have equipped a special demonstration train for the purpose of impressing on the public the great importance of the railway system as an element in national defence. The train has already been exhibited at Stockholm, Gothenberg, and Malmö, arousing great interest,

THE ERITREA RAILWAY

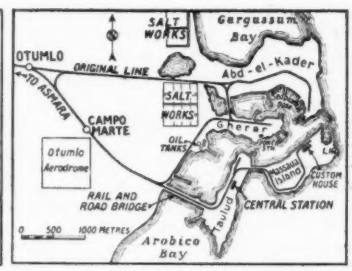
***In less than three months, the British Imperial Forces operating eastward from Kassala have secured control of this Italian-built railway, which was begun in* 1887. *It was completed to Agordat in* 1922, *and an unopened section thence to Biscia built in* 1930**

(*See illustrations on page* 426)

IN the recent development of her East African colonies Italy would seem to have attributed more importance to roads than to railways. For this reason, in the course of our campaign into Italian East Africa the British Imperial Forces have had to advance considerable distances into Italian Somaliland and Abyssinia without making contact with railways. On the other hand, in Eritrea (once our Forces had recaptured Kassala on January 19) the drive was generally eastward towards the capital, Asmara, and the Red Sea port of Massaua. By January 26 our Forces had occupied Biscia, the extreme western railhead of the Eritrea Railway, which



Map of the Eritrea Railway



The port of Massaua

runs from that town 140 miles to Asmara, and thence to Massaua. On the same day British advanced units were reported to be moving towards Agordat, the next important town to Biscia on the railway, and this was occupied on February 1. Agordat is the western extremity of the railway which has been opened to traffic generally, although it is possible that the line between Biscia and Agordat was used by the Italians for the transport of war material during the campaign. After a 7-week siege, Keren (Cheren) was captured on March 27, and our Forces then proceeded along the line to Asmara, which capitulated without resistance on April 1.

The history of the Eritrea Railway began in 1887 when, with a view to facilitating the Italian occupation of that country, the construction of a railway line from the port of Massaua into its hinterland was decided upon. Due to the Italian military and political reversals in Eritrea, work was suspended in 1888 when the line had reached Saati, only about 16½ miles from Massaua, and work was not resumed until 1901. The line was opened to Ghinda, 69 km. (43 miles) from Massaua, in 1904. Asmara, 118 km. (73 miles) from Massaua, was reached in 1911. The construction of the Ghinda—Asmara section proved particularly difficult, due to the mountainous country which necessitated the development of the line in numerous narrow loops, to attain the altitude of Asmara, 7,683 ft. above sea level; the direct distance between Massaua and Asmara is only 65 km. (40 miles). On this section, which has the characteristics of a mountain line, there are some 30 tunnels, a ruling gradient of 1 in 28, and curves of 230-ft. radius. The section from Asmara to Keren, 104 km. (64½ miles), was opened in 1920, and that from Keren to Agordat, 86 km. (53½ miles), in 1922. Between Asmara and Agordat the line is on an easier location, and falls to 1,988 ft. with a ruling gradient of 1 in 40.

Traffic

Before the entry of Italy into the war Massaua and Asmara were connected by three daily passenger services in each direction, of which both early morning and afternoon departures were maintained by fast *Littorine* railcars taking a journey time of between 3¼ and 3¾ hours; before the introduction of the railcars normal steam-hauled passenger trains required 6 hours to connect the two towns and were operated moreover only thrice weekly in each direction. The third service consisted of a daily mixed train in each direction designed primarily to serve local needs. These left both Massaua and Asmara in the morning, shortly after the railcars. These mixed trains occupied between 6¾ and 7½ hours on the journey. A further local mixed train was run between Ghinda and Asmara, and through boat trains were worked between Massaua and Asmara in connection with the arrival or departure of the Italian mail boat. On the Asmara and Agordat section passenger services consisted normally of an afternoon railcar departure four times weekly from Asmara, and an early morning railcar departure from Agordat. The journey time was approximately 5½ hours. In addition, a daily mixed train in each direction covered the journey in about 10¼-10¾ hours.

For the freight traffic the mixed trains on both sections, supplemented by a few goods trains when traffic necessitated, were sufficient. The import traffic (west-bound) consisted mainly of industrial and consumption goods, and the export traffic was represented chiefly by agricultural products (particularly cotton) and animal products (particularly hides and skins); the total goods traffic averaged 150,000 *tonnes* a year.

The management of the Eritrea Railway (a Government-owned undertaking) is at Taulud town, the European portion of Massaua. The main station is also on Taulud Island. A rail and road bridge, about 930 yd. long, connects that island with the mainland; beyond the station the railway extends over another rail-road bridge, about 328 yd. long, to Massaua proper on Massaua Island, skirting the native town. On Massaua Island is situated the quay for the mail boats, and the railway line ends in front of the customs house. The extension from the main station to the custom house is about 2,023 yd. long. Another harbour line, about 1,650 yd. long, on the mainland, branches off from the main line (just before the latter crosses the first bridge, about 1,860 yd. distant from the main station), and reaches Gherar Peninsula to the northwest of Massaua Island. This peninsula forms part of the industrial and harbour zone of Massaua, and contains, among other establishments, the salt works and salt refinery, the electric power station, and oil tanks. In the early years of its existence, the initial section of the railway did not originate at Taulud Island but on Abd-el-Kader Peninsula, to the north of Gherar Peninsula.

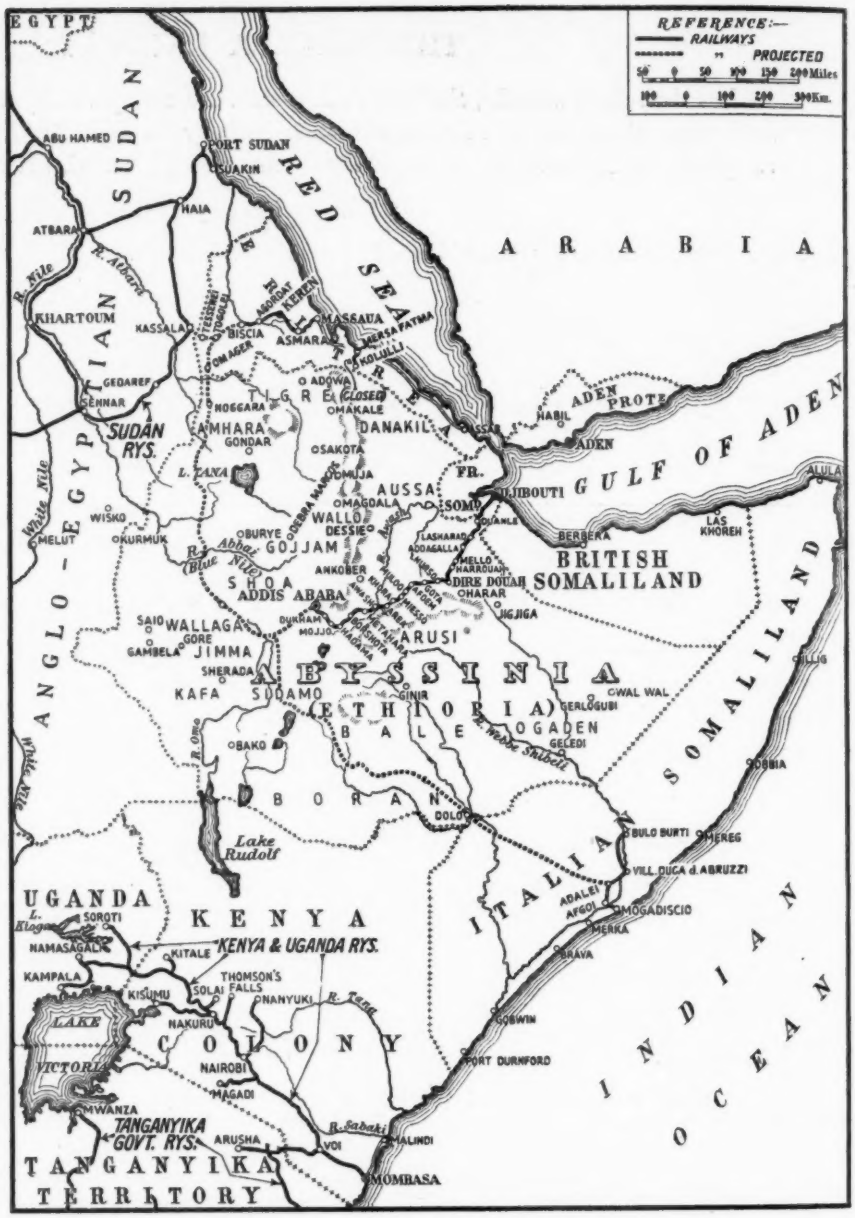
The complete scheme included the extension of the railway from Agordat, *via* Biscia and Togolei (on the Seti river), to Tessenei, the centre of the cotton-growing region. A branch line was projected from Togolei toward the south, *via* Hamiol, to Om Ager (near El Aghin) on the Abyssinian fron-

tier. Furthermore, from Tessenei (on the Gash river) a connecting line was to have been built to Kassala (on the same river) in the Anglo-Egyptian Sudan. The gauge of the line is 0·95 m. (3 ft. 1⅛ in.), the same as that of the Sardinian secondary railways, and the one commonly used for Italian-built colonial railways. Thus, although Kassala is an important centre of the Sudan Government Railways, the benefit to the Italians would have been reduced by a break of gauge, as the Sudan Railways are of the slightly wider gauge of 3 ft. 6 in. The Agordat—Biscia—Togolei—Tessenei line would have been about 157 km. (97½ miles) long; the branch line from Togolei to Om Ager 120 km. (74½ miles); and the Tessenei—Kassala connecting link 55 km. (34 miles), of which 30 km. (18⅛ miles) would have been on British territory.

Of this ambitious scheme for some 302 km. (188 miles) of railway on Eritrean soil, only 35½ km. (22 miles) were actually built, namely, the extension from Agordat to Biscia. This was completed in May, 1930, but was never opened for commercial service, as meantime road motor traffic had come into prominence, and Agordat became the centre of about 20 motor roads totalling some 800 km. (497 miles). In addition, about 40 motor tracks, aggregating about 3,000 km. (1,863 miles) radiate from Asmara. The capital is also connected to Addis Ababa by a motor road some 1,100 km. (683 miles) long.

Nevertheless, as recently as 1933 a meeting of the Italian Cabinet decided to extend the Eritrea Railway from Biscia to Togolei and Tessenei, so as to bring the line within a short distance of the frontier of the Sudan; at the same time the branch to Om Ager was again considered. Brief details of this scheme were given at page 377 of our September 15, 1933, issue. So far as is known, little, if any, of the work was carried out.

Apart from a short disused branch of the Eritrea Railway to some abandoned limekilns at Zaga, the only other railway in Eritrea actually constructed was a decauville line about 65 km. (40 miles) long between the port of Mersa Fatma and Kolulli, but this was abandoned some years ago.



Sketch map of the railways of East Africa

The Eritrea to Italian Somaliland Proposals

The plan for the extension to Om Ager was associated with an extensive scheme some 35 years ago when a convention was entered into (in 1906) between Great Britain, Italy, and France, by which it was agreed that Italy should be permitted to build a railway linking Eritrea and Italian Somaliland, and passing to the west of Addis Ababa, one of the objects of which was the development of the western and southern districts of Ethiopia. In 1915, the Italian Minister for the Colonies sent an engineer from the Italian State Railways to investigate the most satisfactory route. He proceeded to Addis Ababa and began his survey in May, 1916, amid considerable difficulties resulting from the 1914-19 war. After leaving Addis Ababa he passed Ambo, Billo, and Gimma; turned northwards past Lechemti and crossed the Blue Nile at the ford of Aradaura; then continued *via* Debra Marcos, Burie, Danghila, and Gondar, and reached Eritrea in November of the same year. As the result of this survey a route was prepared for a line running southward from Om Ager which would have passed *via* Noggara, Celga, and to the west of Gondar. It would then have followed the watershed west of Lake Tana touching Ismala Ghiorgis, passed near Danghila, and, still keeping to the upper alpine districts reach Burye. Here the proposed route turned south along the Fetam valley, crossed the Blue Nile, and reached the Mount Lechemti watershed between the rivers Blue Nile and Omo, which it was planned to cross at about 6,890 ft. near Mount Egu. From here it followed the right bank of the Ghibie up to the confluence of that river with Gimma. Beyond here the route was not prepared in detail, but it was intended to follow the Omo valley and to proceed through

the Omo valley to the Oncure cataract, through the lake district to the south of Addis Ababa and thence use the Giuba valley to reach Dolo, on the borders of Italian Somaliland. Subsequently, the route was modified in some details, and in 1936 the projected course had assumed the line indicated on the accompanying map.

Aerial Cableways

Several aerial cableways have been constructed in Italian East Africa within the last few years. The most important of these is the one between Massaua and Asmara, 71·8 km. (44½ miles) in length. It was opened in March, 1937, and was intended to relieve the congestion in the port and on the railway. The working capacity of the cable is 300 tons a day of 10 hours, and costs are said to be very low. Other aerial cableways are those of Dante (Hordio) and Amara, and there are also some shorter privately-owned industrial cableways.

THE ABYSSINIAN RAILWAY

A brief history and description of the C. de f. Franco-Ethiopien de Djibouti à Addis Abeda, the only railway in Abyssinia

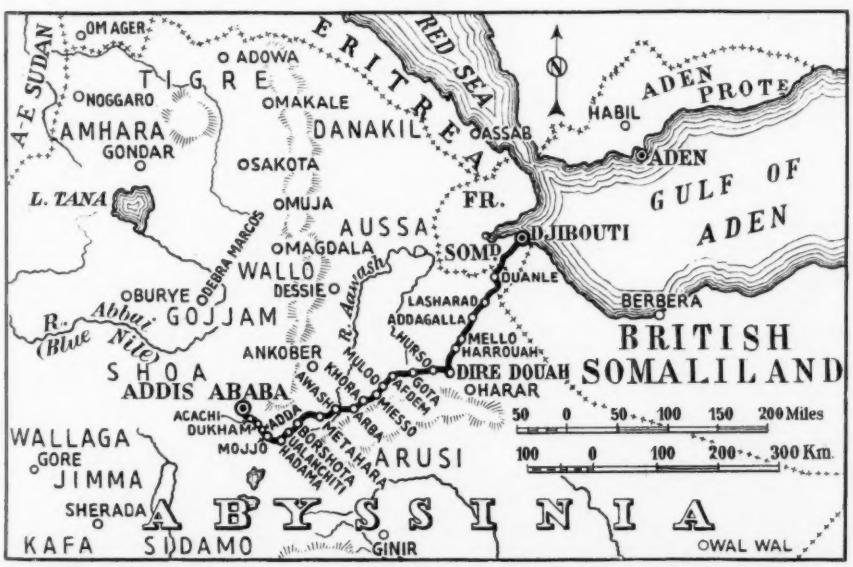
THE solitary railway in Abyssinia is once more of topical interest now that the country is again a theatre of war.

Abyssinia has no seaboard of its own, and its north-eastern frontier is separated from the Red Sea and the Gulf of Aden by Eritrea and French and British Somaliland. On this coastal strip is situated the French port of Djibouti, which is the nearest outlet to the sea for the Abyssinian capital, Addis Ababa (a town of about 100,000 inhabitants), and is connected thereto by a railway. In 1896, France agreed to recognise the designation of Djibouti as the official port of Abyssinia, and from that year dates the conception of the railway joining Djibouti to Addis Ababa (or Addis Abeda as the French then called it), the construction of which by France was officially recognised by Great Britain and Italy in the treaty of 1906.

Two years before, by a contract dated March 9, 1894, the Emperor Menelik II had granted to M. Ilg, a Swiss engineer, a concession for a railway to be built in three sections: from Djibouti to Harar; Harar to Entotto, then capital of Abyssinia; and Entotto to the White Nile across the Kafa. The first section was to be built within two years of the date of the concession. With M. Chefneux, M. Ilg founded the Compagnie Impériale des Chemins de fer Ethiopiens, and this company obtained the authorisation of the French Government to construct the first section of the railway from Djibouti to Harar across French Somaliland. Meanwhile preliminary studies on the route had shown that it would be extremely difficult to reach Harar, and the company obtained permission from the Abyssinian Emperor Menelik to fix its first provisional terminus at the place which had since become Dire Douah.

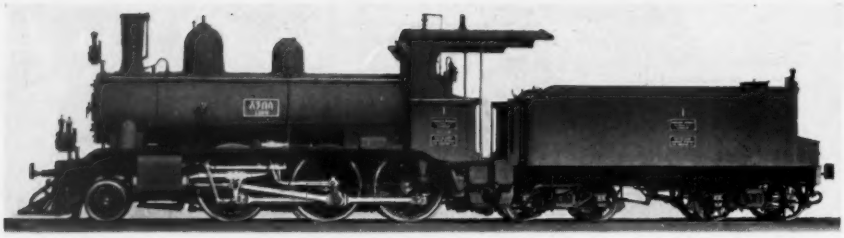
In October, 1897, work began at Djibouti and was continued across the rugged, desert country of French Somaliland towards Harar. Some 65 miles were opened to traffic in 1900, and the line reached Dire Douah (193 miles) in 1902. In the face of hostile tribes and a thousand other difficulties the Compagnie Impériale was unable to continue beyond Dire Douah, and it was not until the French Government had lent financial aid, and a new company—the Compagnie de Chemins de fer Franco-Ethiopien de Djibouti à Addis-Abeda—had been formed that work could be resumed. Addis Ababa had now become the capital of Abyssinia and, as such, was to be the terminus under the new agreement.

The new company took over the undertaking in 1908, and in 1909 work was resumed. By 1913, 93 miles (150 km.) of line had been constructed as far as Miesso. At the end of that year the steel bridge over the Awash, 500 ft. long and 200 ft. above the river, was completed, and by the end of 1914, despite difficulties occasioned by French mobilisation consequent upon the outbreak of the war, the line had reached Mojjo, 444 miles (715 km.) from Djibouti. On May 21, 1915, it was opened to a point near Addis Ababa, but due to delay on the part of the Abyssinian Government in handing over land, it was not until June, 1917, that the completed line, 487 miles (784 km.) in length, could be opened for traffic throughout. Since then numerous modifications have been effected; among these was the opening of the new station building at Addis Ababa in December, 1929.



Sketch map of the railway between Djibouti and Addis Ababa

The first 56 miles (90 km.) from Djibouti are in French Somaliland, and the railway crosses into Abyssinia shortly before reaching Duanle station. The line runs across a desert region inhabited by the Nomad, Somali, and Issa tribes—whose only resource is the breeding of camels, sheep, and goats and some cattle—until it reaches Dire Douah, 193 miles (311 km.) from the coast, and 3,900 ft. in altitude. Dire Douah is a centre for the produce of the Harar and Tchercher provinces—mainly live-stock, coffee, wax, cereals, butter, and leather. Caravans also take back into the interior cotton goods, salt, sugar, paraffin, soap, building materials (corrugated iron, builders' hardware), ironmongery, wines, liqueurs, etc., brought in by the railway. After Dire Douah the line leaves the Dankali desert and runs along the foot of the Tchercher mountains, the fertile valleys of which are inhabited by sedentary Galla peoples, and produce coffee and



Left: Lightweight 2–6–0 locomotive "Lion," built by the Swiss Locomotive & Machine Works, Winterthur, for the Cie. Impériale des Chemins de Fer Ethiopiens

cereals; it then crosses, at the Col des Assavots (4,820 ft.) the massive spur running northwards from the main chain, that deflects the Awash River in that direction. The railway and road cross the Awash gorge on a steel girder bridge 490 ft. long and 195 ft. high.

From the Awash to Addis Ababa, which stands at an altitude of 7,700 ft., the line climbs to reach the central plateau of Abyssinia, with its striking valleys, varied crops, and vast horizons. Addis Ababa, the terminus of the line, is also the largest market. It was formerly a military camp of the Emperor Menelik, but has now become a large town, made more agreeable by the forest of eucalyptus trees which shades it. Goods brought up by railway are carried onwards into the interior to distances up to 250 miles or more by mule or camel caravans or by motorcar. In return Addis Ababa receives from the Shoa, skins and cereals and some flour; from the Gore provinces and from Wallaga to the west, ivory, skins, wax, rubber, gold, and platinum; and from the Gojjam—around the sources of the Blue Nile where it leaves Lake Tana—skins. From the Jimma to the south-west, one of the richest provinces of Abyssinia and one of those in which most trade is done, as well as from the Kafa (a wild province), are brought coffee, cattle skins, wax, civet, and also the rare and much sought black panther skins.

This 487-mile line is of metre gauge and, in its climb up from the coast, it rises to a height of over 8,000 ft. The steepest gradient is 1 in 38, and there are numerous curves, the sharpest of which are of 328 ft. radius. On the section first opened the rails are 32 ft. 10 in. (10 metres) long, 40 lb. per yd. ft. section, on 11 steel sleepers a length. On the extension they are 39 ft. 4 in. (12 metres) long, 50 lb. per yd., and rest on 13 sleepers. The company has workshops at Dire Douah, and depots at Djibouti, Dire Douah, and Addis Ababa. All rolling stock is fitted with automatic couplings, and only tender engines are used for through traffic owing to the long distances between permanent sources of water supply. Before the Italian invasion of 1935, the company possessed the following rolling stock: 54 locomotives, 48 passenger carriages with seating for 2,706 passengers, and 445 goods wagons ranging up to a capacity of 30 *tonnes*. The 1940 figures are given as 91 locomotives, 52 passenger carriages, 4 railcars, and 601 goods wagons.

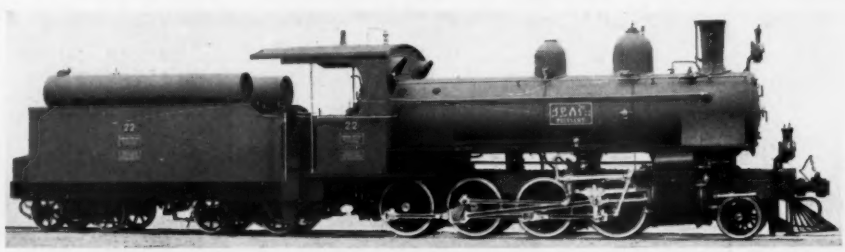
Passenger stock consists of comfortable bogie carriages; first and second class are painted white, and third class are French grey, as are also the goods vehicles. Electric lighting and ventilating fans are used, and the windows are fitted with side screens; lavatory accommodation is provided in every carriage. The seats, of which there are six in each compartment, have loose overall linen covers which are changed at intervals. Compressed air braking is used.

Locomotive Stock

The 54 locomotives in service in 1935 comprised eight 0-6-0 tank, nine 2-6-0 tender, and 37 2-8-0 tender engines. The tank engines were built about 33 years ago by the little-known firm of Pinguely, of Lyons. The nine 2-6-0 locomotives were built in the days of the Ethiopian Railway by the Swiss Locomotive Company, and are of very light weight, scaling only 29 *tonnes*, of which 24 *tonnes* is available for adhesion. The two cylinders have a diameter of 14⅛ in. and a stroke of 21½ in.; the coupled wheels are 4 ft. in dia. and the total engine wheelbase is 16 ft. 9 in. The boiler produces saturated steam at a pressure of 170 lb. per sq. in., but is of small size, the grate area being only 10·8 sq. ft. and the heating surface 760 sq. ft. The first four 2-8-0 locomotives were built about 41 years ago by the Swiss Locomotive Works. They are two-cylinder compounds weighing 36 *tonnes*, of which 29½ *tonnes* are available for adhesion. The high-pressure cylinder is 16½ in. and the low-pressure 24¾ in. dia. by 21½ in. stroke; coupled wheels are 3 ft. 3½ in. dia. and the locomotive wheelbase is 18 ft. 2 in. Saturated steam at a pressure of 185 lb. per sq. in. is produced from the 13·8 sq. ft. of grate area and 985 sq. ft. of heating surface. The tenders of both these Mogul and Consolidation classes hold 3½ *tonnes* of coal and 2,100 gal. of water, and weigh 23¾ tons in working order.

In 1910, the Soc. Alsacienne built at its Belfort works eight two-cylinder compound 2-8-0 locomotives not unlike the Swiss-built machines, but fitted with superheaters, and this marked the transference of the motive power and rolling stock orders from Swiss to French firms, corresponding to the change in controlling influences. The Soc. Alsacienne has since delivered a further 25 Consolidation engines, all of the simple type, and all except eight fitted with superheaters. The latest engines were delivered in 1929 and weigh 46 tons without tender. The cylinders are 18½ in. dia. by 21½ in. stroke; the driving wheels are 3 ft. 5½ in. in dia., and the working pressure is 180 lb. per sq. in. All 54 engines have names as well as numbers. No recent information is available regarding new rolling stock placed into service since the Italian occupation of Abyssinia.

In early years no night trains were run because of the depredations of native tribes, but since 1926 they have been run regularly except in the rainy season, when the track is liable to damage. Up to 1935 there were four trains each way daily. The time taken by a passenger train from Addis Ababa to Djibouti was formerly three days, but in 1935 some trains did the journey in 33 hr., and special trains in 25 hr. Goods trains took up to five days. The 1940 timetable shows a direct train between Djibouti and Addis Ababa once weekly in each direction, leaving Djibouti on Mondays and Addis Ababa on Sundays. The trains comprised first and second class carriages and sleeping cars, and the journey took approximately 25 hours. The only other through service comprised a thrice-weekly slower train leaving Djibouti on Tuesdays, Thursdays, and Saturdays, and Addis Ababa on Mondays, Wednesdays, and Fridays. These trains included first, second, and third class carriages between



Right: 2 – 8 – 0 locomotive "Puissant," built for the original Impériale company by the Swiss Locomotive & Machine Works

Djibouti and Dire Douah, and third class only between Dire Douah and Addis Ababa. The journey time took just over 45 hours. A thrice weekly service by *Littorine* railcars was run between Addis Ababa and Dire Douah in about 9½ hr. including a 45-min. stop at Awash, leaving Addis Ababa on Tuesdays, Thursdays, and Saturdays, and from Dire Douah on Wednesdays, Fridays, and Sundays. Finally there was a daily local train between Addis Ababa and Ualanchiti (between Hadama and Borshota).

In independent Abyssinian days, the fares were cheap, particularly for natives—10 cm. a km. and 5 cm. around Addis Ababa. The first class ordinary fare from Djibouti to Addis Ababa was fr. 600.

The total cost of construction of the railway was 114 million French francs. The number of passengers carried a year varied from 300,000 in 1929 to 120,000 in 1933, and the quantity of goods imported from 49,000 tons in 1929 to 30,000 in 1933; the quantity exported was fairly steady, namely, about 25,000 tons since 1925, rising to 27,800 tons in 1931. Traffics in more recent years have been recorded as follow:—

Year	Passengers	Goods, tons
1935	110,689	76,274
1936	181,010	116,527
1937	279,332	153,072
1938	412,230	122,230

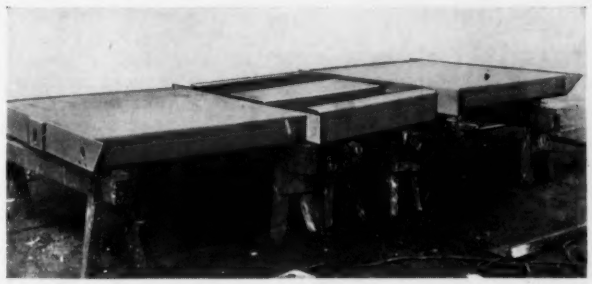
The increase in passengers is solely in local traffic and in short journeys, and the receipts under this head actually fell from fr. 13,559,018 in 1937 to fr. 13,542,402 in 1938. Preliminary figures for 1939 showed a further reduction under both heads of traffic, due no doubt to the ever-increasing use of roads and the diversion of imports from the port of Djibouti to those of Massaua and Mogadiscio. The company had a staff in 1935 of 150 Europeans and 1,500 natives, but later staff figures are not available.

A NEW DESIGN OF WELDED RAILWAY WAGON

In this design lightness combined with strength and increased capacity have been achieved

IN the new all-steel welded 14-ton open wagon illustrated, the place of the usual underframe built up of rolled steel sections (channels) is taken by a form of construction in which the frame is formed in one piece with the bottom of the wagon. The Butterley Co. Ltd. has evolved this design, in which the utmost advantage has been taken of the technical possibilities of welding to provide a wagon at once more capacious and lighter than vehicles of the same general type.

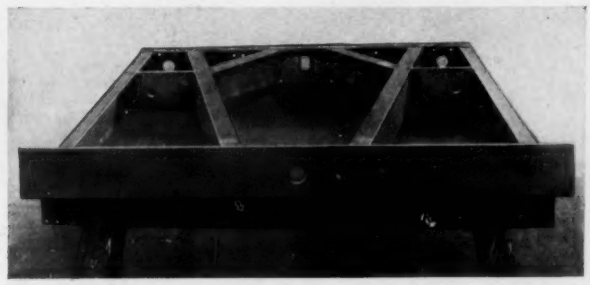
The bottom of the wagon is made in three sections, each based upon a single sheet, the side edges of which are bent to form a channel section. The centre section of the three is arranged to leave the openings for the bottom doors. All three sections are then welded end-to-end, with a gusset or web-plate between them to form the cross-bearers. Suitable members are then welded in position to form diagonals and buffer trimmers, the whole forming a very strong combined wagon bottom and underframe. Upon this, the body, which is of the well-known Butterley patent design, with rolled top-belt and bolted construction, is built. This design greatly facilitates the work of repair arising from damage to the vehicle. The running, buffing and drawgear arrangements of the new wagon are all to Railway Clearing House standards.



The three sections which form the underframe and wagon bottom, ready for welding together

The new Butterley all-welded steel railway wagon, capacity 14 tons, tare weight 6 tons 15 cwt.

The result of combining the frame and wagon bottom in one structure, together with the Butterley patent construction of the body and the substantial corrugation of ends and side doors, effects a substantial saving in weight without sacrificing anything in the way of strength. The increased capacity (14 tons instead of 12 tons) of the new wagon is actually achieved with a tare weight of 6 tons 15 cwt., as compared with the standard 12-ton R.C.H. wagon, which weighs 7 tons. The respective ratios of paying load to deadweight are 2·07 and 1·71. In drastic shunting trials, although a number of other wagons were damaged in various degrees, the new wagon was not distorted. Quasi-Arc electrodes and welding equipment were used in the construction.



Underside of an end section, showing the plate turned over to form side channels. The diagonals and buffer trimmers will be noted

AUTOMATIC ARC WELDING OF RAILWAY WHEEL TYRES

A successful process which results in important savings

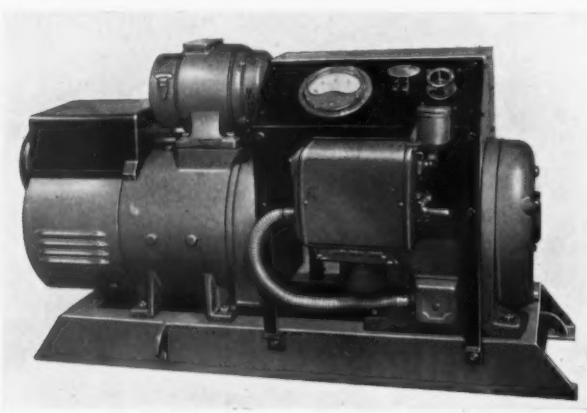
THE speedy and efficient repair of railway equipment by means which ensure economy of material is in present circumstances of great importance, and the application of automatic arc welding to the repair of worn wheel flanges is, therefore, of special interest. The building up of worn flanges by the process herein described has in practice enabled wheels to undergo treble the number of machinings before reaching the scrapping stage. From this the economy in material alone is considerable, and, as the cost of building up by welding is not more than 25 per cent. of the gross saving effected, the net saving on tyres is in the region of 50 per cent. Added to the fact that a built-up wheel requires to be machined to a depth of only 1·5 mm. to obtain the normal surface, instead of about 8 mm. as is usual, the time required for the machining is 5 or 6 times less, and the expenditure on motive power and labour per axle is reduced in this proportion.

The process is that of the Fusarc Welding Co. Ltd. of Letchworth, and is carried out with a standard Fusarc stationary type automatic arc welding head mounted on a specially designed jig to hold one pair of wheels. In order to appreciate the capabilities of this machine it is necessary to have some acquaintance with the working features of the Fusarc automatic arc welding head, as it is mainly on the patented design of this that the speed and reliability of the process depends.

In the design of an automatic arc welding machine, one of the most important considerations is to provide for stability of the arc, and this has been achieved by an arrangement of magnetic clutches operated by relays in the electrical circuit; these clutches feed the electrode automatically according to a pre-set arc voltage. Should this vary by even so little as one volt, the feed of the electrode is retarded or increased to stablise the arc. The clutches operate direct on to the electrode feed roller shaft, and not through gearing, so that instantaneous action is assured without any lag due to gear backlash. In spite of this sensitive control, the mechanism entailed is by no means delicate or difficult to operate. On the contrary, every working part is robustly constructed and rarely, if ever, needs attention. It can even be operated by unskilled labour.

Another general problem that has been successfully overcome concerns the electrode and the means of making welding-current contact with it. In manual welding such a problem does not, of course, arise, as the contact is made at the bare wire end of the rod. In automatic welding machines this method has the disadvantage that the machine has to be fed with short lengths of electrode, and high amperage cannot be used without risk of overheating the rods. The use of a continuous electrode with a non-concentric coating to allow contact with the core wire, or of bare wire with the flux applied separately around the weld, makes a balanced supply of flux impossible, and therefore consistency of weld deposit cannot be guaranteed.

Jig for automatic welding of railway wheels



Generator group designed for automatic arc welding

Such difficulties are overcome by the patented design of Fusarc continuous electrode, having its central core wire spirally wound with an auxiliary wire on to which the flux is extruded. It is then bound with steel tape, which not only protects the flux coating but also permits of the welding-current contact being made actually in the spring jawed copper nozzle of the welding head, just above the work. High amperage welding can thus be carried out with no possibility of destroying the qualities of the flux by overheating the electrode. It is the use of high amperage in this way that enables a large amount of metal to be deposited in a short time.

Referring now specifically to the application of the Fusarc automatic machine tool to the building up of worn wheel tyres, it was obviously necessary to ensure that a weld deposit possessing the right mechanical properties could be obtained. Tests revealed that Fusarc Special 60 type of continuous electrode deposited metal of the desired homogeneous quality, free from porosity or blow holes, and also made perfect fusion with the base metal. This electrode is now in production for the special purpose of building up tyres, and is being exported to overseas railways.

Continuous electrode is available in 6 or 8 s.w.g., depending upon the weight of deposit required and the cross section

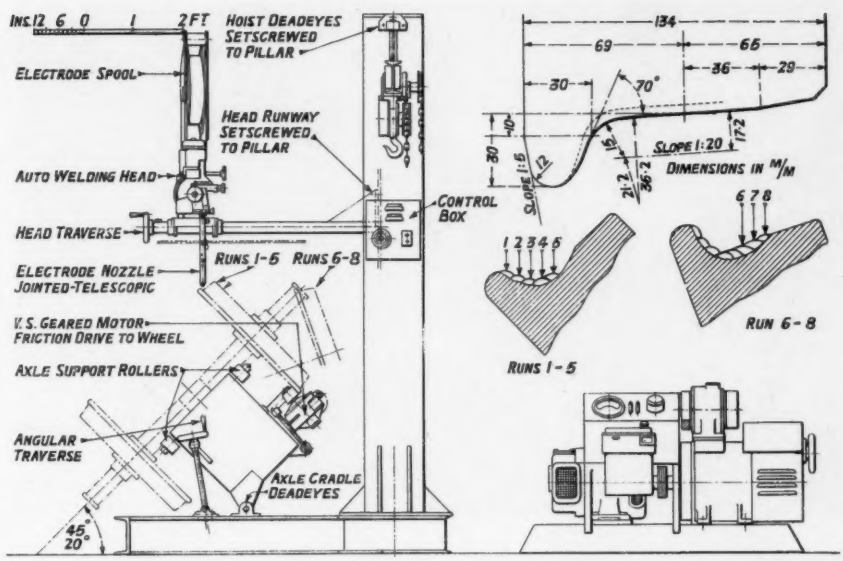
of the wheel to be repaired. The mechanical properties of Special 60 continuous electrode are, of course, governed to a great extent by the properties of the parent metal with which it combines. The resultant deposit, however, compares favourably with the usual test figures required, and in some tests elongation, for instance, considerably exceeds the standard specification figures.

Mechanically, therefore, the results of the process are highly satisfactory. The following details concerning costs are of interest; there are three factors to be taken into consideration:—

(*a*) Current: the power required depends upon the amperage used but approximates 2·5 kWh. per lb. of metal deposited.

(*b*) Deposited metal: the machine deposits approximately 7 lb. of metal per hr.

(*c*) Labour: the deposit of metal by the machine is more than six times greater than that of a hand welder, whose normal utilisation factor is about 50 per cent.



Details of complete machine and generating set; also sections of tyre showing application of new metal and wheel rim repaired by automatic arc welding

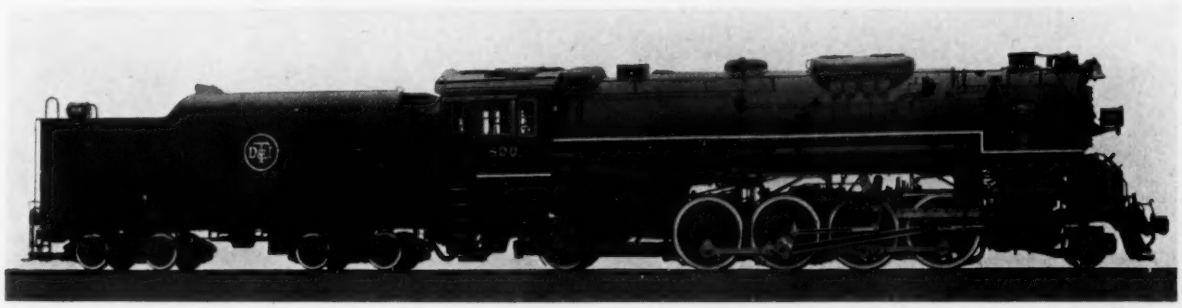
To bring everything to the common basis of one hour working of the machine, the driving power required from the generator being 2·5 kWh. per lb. the hourly consumption of current is 2·5 by 7, equals 17·5 kWh. This gives, therefore, all the elements for the determination of the three factors of cost: current, labour, and deposited metal. The cost varies on the one hand with the overhead expenses and on the other hand with the surface limits adopted by the railways concerned.

The process described has been largely used in France, and, in a recent article in a French contemporary, M. Dagory, an engineer of one of the French railway administrations, mentioned 183 railcars used on his system, of which 160 were in daily service. Each of them covered, on an average, 250 km. a day, and M. Dagory reported that the first machining took place after 40,000 km., the second machining after a further 30,000 km., and the third machining after 30,000 km. more. Until the building-up process was adopted the wheel was scrapped after a final 20,000 km., which gives a total distance of about 120,000 km. As mentioned earlier in this article the number of machinings was subsequently trebled.

We recently attended a demonstration of the process at the works of the manufacturers at Letchworth, where we witnessed the building up of a worn railway wheel flange. The work was performed with rapidity and we were favourably impressed with the ingenuity of the design of the machine and the efficient manner in which it operated.* There would appear to be a very promising future for this method of building-up worn flanges on railway carriage and wagon wheels.

* The demonstration was continued on the day after our visit, when representatives of the L.N.E.R., L.M.S.R., and Southern Railway were present

New American 2-8-2 Freight Locomotives



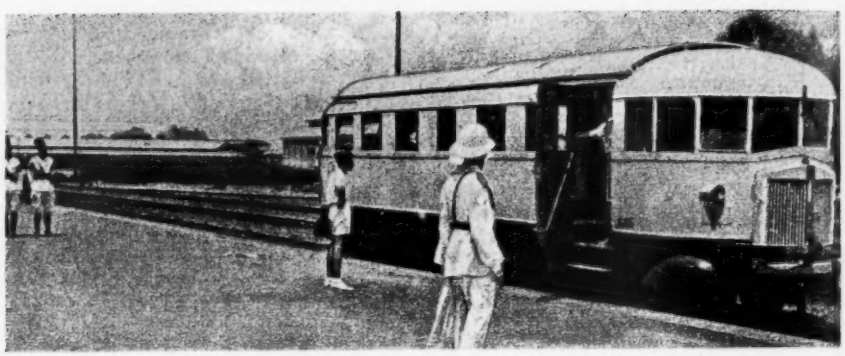
BUILT by the Lima Locomotive Works for freight service on the Detroit, Toledo & Ironton Railroad, the locomotive illustrated, one of four, has two 23 in. by 30 in. cylinders and coupled wheels 5 ft. 3 in. in diameter. The boiler measures 6 ft. 10 in. in diameter and carries a working pressure of 260 lb. per sq. in. The tubes and flues, which are 20 ft. long, contribute 3,719 sq. ft. to the total evaporative heating surface of 4,009 sq. ft., the balance being made up by the 230 sq. ft. of the firebox and the 60 sq. ft. of the circulators. The superheater has a surface of 1,815 sq. ft., and the grate an area of 66·9 sq. ft. The coupled wheelbase is 16 ft. 9 in., and that of the whole engine 37 ft. 3 in.; with the tender included the total wheelbase is 75 ft. 0¼ in. In working order the engine weighs 165 long tons of which 111 tons are on the coupled wheels. The eight-wheel tender accommodates 14,300 gal. of water and 17 tons of coal. The engine develops a maximum tractive effort of 55,600 lb. and the factor of adhesion is 4·47.

Railways and the War—65

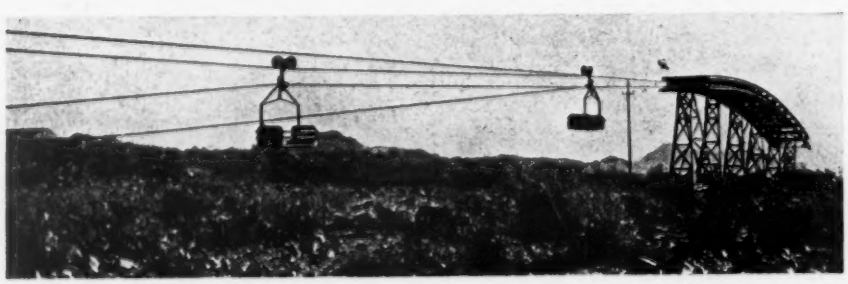
THE ERITREA RAILWAY

(See article on page 419)

Above : Steam train on single-line Eritrea Railway on the viaduct near Arbaroba station on the approach to Asmara



Right : A "Littorina" railcar at Massaua



Above : Kohn bridge over the River Barca, on the Keren-Agordat section

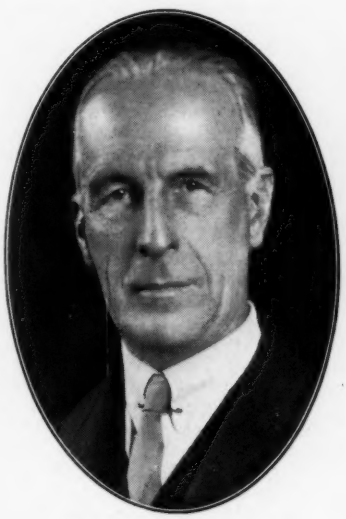
Left : A portion of the Massaua-Asmara cableway

RAILWAY NEWS SECTION

PERSONAL

Mr. R. P. Biddle has been appointed Deputy Director of Ports, Ministry of Transport. As we recorded in our March 14 issue, the services of Mr. Biddle, who is Docks & Marine Manager, Southern Railway, have been loaned to the Ministry of Transport.

Lord Ritchie of Dundee has retired from the chairmanship of the Port of London Authority. Charles Ritchie was born on November 18, 1866, and was appointed a member of the P.L.A. (as a Representative of the City Corporation) in 1909 when the authority was instituted. He was Vice-Chairman from 1913 to 1925 when he became Chairman.



Lord Ritchie of Dundee
Chairman, Port of London Authority, 1925-1941

The Rt. Hon. Thomas Wiles, P.C., Vice-Chairman of the Port of London Authority since 1934, has been appointed Chairman in succession to Lord Ritchie, who has retired. Mr. Wiles was sworn as a Privy Councillor in 1916.

Mr. L. H. Bolton has been elected Vice-Chairman, Port of London Authority.

The Minister of Transport, Lt.-Colonel J. T. C. Moore-Brabazon, M.C., M.P., has appointed Miss E. H. Johnston to be his Assistant Private Secretary. The Parliamentary Secretary to the Ministry of Transport, Mr. Frederick Montague, M.P., has appointed Miss E. H. Johnston to be his Private Secretary.

Stewarts and Lloyds Limited announces that Sir Walter Benton Jones has joined the board.

Dr. Diogenes Taboada, a former Minister of the Interior in the Argentine Government and for many years legal adviser to the local board of the Buenos Ayres & Pacific Railway, has been recognised as the Legal Representative of that company by a Decree issued by the Ministry of Public Works.

Mr. T. W. Brown, B.Sc., A.M.Inst. C.E., Chief Assistant in the Parliamentary & Constructional Section, Engineer's Office, Scottish Area, London & North Eastern Railway, has been appointed District Engineer, Aberdeen District, in succession to Mr. W. Ebdon, who has retired.

McMahon [*Aberdeen*

Mr. T. W. Brown, B.Sc.
Appointed District Engineer, Aberdeen, London & North Eastern Railway

Mr. H. G. Humphreys, M.B.E., M.Inst.T., District Goods Manager, L.M.S.R. & G.W.R., Manchester District is retiring at the end of this month. Mr. Humphreys entered the service of the London & North Western Railway Company at Liverpool in 1896. In 1912 he was appointed Goods Assistant to the Traffic Superintendent of the Lancaster & Carlisle Division. During the last war he was associated with Mr. Howard-Williams in the Ministry of Munitions, and returned to the Lancaster & Carlisle Division as Assistant District Traffic Superintendent in October, 1919. It was for his work in the Ministry of Munitions from 1915-1919 that Mr. Humphreys was awarded the M.B.E. In May, 1920, he was transferred, in a similar capacity, to the London District, and two years later, upon railway amalgamation, became Assistant District Goods Manager, London. On November 1, 1925, he went to Warrington as District Goods Manager, and remained there until August, 1929, when he was appointed District Goods Manager, Manchester. After September, 1939, Mr. Humphreys assumed increased responsibilities in the Manchester District as Railway Liaison Officer with many Government departments, and was the Railway Officer in the Manchester district authorised by the Minister of Transport for the requisitioning or removal of plant or property of all railway companies. In addition, he was appointed railway representative on the Regional Transport Advisory Committee, North Western Traffic Area; railway representative on the Manchester Port Emergency Committee; and Chairman of the Railway Panel on the North Western Regional Committee of the Road & Rail Central Conference.

Lafayette [*Manchester*

Mr. H. G. Humphreys, M.B.E.
District Goods Manager, L.M.S R. & G.W.R., Manchester District, who is retiring

We regret to record the death on March 16 at the age of 79 of Mr. William Graham Bradshaw, C.B.E., Deputy Chairman of the Midland Bank Limited for 48 years. He was a member of the firm of R. Bradshaw & Son, solicitors.

G.W.R. Staff Appointments

Mr. W. C. H. Penelrick has been appointed temporary Freight Train Assistant to the Divisional Superintendent at Newport.

Mr. T. W. Smith has been appointed Joint Stationmaster at Bristol (Temple Meads).

Mr. B. F. Bishop has been appointed District Estate Agent, Swansea, in succession to the late Mr. R. C. Brown.

Mr. F. G. Gray has been appointed Chief Clerk, Road Transport Department, in succession to Mr. R. W. Bulley, who has retired.

SIR NIGEL GRESLEY

THE death at Watton House, Hertford, on Saturday last, April 5, of Sir Nigel Gresley, Chief Mechanical Engineer of the London & North Eastern Railway, in his 65th year, leaves a gap which will be hard to fill. His career has no parallel in the locomotive history of this country. For nearly 30 years he has held the chief executive position on the mechanical engineering side of an important railway, first as Locomotive Engineer of the former Great Northern Railway, to which post he was appointed at the comparatively early age of 35, and, secondly, as Chief Mechanical Engineer of the L.N.E.R.

Herbert Nigel Gresley, son of the late the Rev. Nigel Gresley, Rector of Netherseale, was born on June 19 1876 and educated at Marlborough. He began his railway career at Crewe works, London & North Western Railway, where he served his apprenticeship under the late F. W. Webb. He was subsequently a pupil under the late Sir John Aspinall at Horwich, Lancashire & Yorkshire Railway, and, after varied experience, was placed in charge of the test room at those shops. He was next appointed foreman of the two locomotive sheds at Blackpool and subsequently became Outdoor Assistant in the Carriage & Wagon Department. In 1901 he became Assistant Works Manager at Newton Heath, was promoted Manager in the next year, and in 1904 was appointed Assistant Superintendent of the department. A year later Gresley transferred his services to the former Great Northern Railway as Carriage & Wagon Superintendent, which position he held until October, 1911, when he succeeded the late H. A. Ivatt as Locomotive Engineer at Doncaster. On January 1, 1923, he became Chief Mechanical Engineer of the newly-formed London & North Eastern Railway, the only technical officer whose authority covered the whole system, as the L.N.E.R. adopted the divisional system with chief technical officers for each division.

Photo] [Lenare

The late Sir Herbert Nigel Gresley, C.B.E., D.Sc.
M.Inst.C.E., M.I.Mech.E., M.I.E.E., M.Inst.T.
Chief Mechanical Engineer, L.N.E.R., 1923-1941
Locomotive Engineer, G.N.R., 1911-1922

In January, 1920, he was awarded the C.B.E. for special services rendered during the war of 1914-19, and in the Birthday Honours of 1936 was created a Knight Bachelor. Three months earlier, the Court of the University of Manchester, at a special meeting on March 25, 1936, authorised the conferment upon Gresley of the Honorary Degree of Doctor of Science. He was President of the Institution of Locomotive Engineers for the years 1927-28 and 1934-35; and President of the Institution of Mechanical Engineers for 1936-37. In addition to his membership of these institutions, he was a member of the Institution of Civil Engineers, the Institution of Electrical Engineers, and the Institute of Transport. As long ago as 1920, he was gazetted Major in the Engineer & Railway Staff Corps, Territorial Force, Royal Engineers, as from December 11, 1920, and at the time of his death held the rank of Lt.-Colonel.

His most important contributions to the literature of mechanical engineering were presented in the form of papers to the technical institutions. In his first to the Institution of Mechanical Engineers, delivered in 1925, he described the advantages of three-cylinder simple propulsion for steam locomotives, a principle of which he was a constant adherent. His second paper to that institution was on high-pressure locomotives and described his famous No. 10000, the four-cylinder compound with a Yarrow water-tube boiler, which he placed in service in 1929. In 1931 he delivered a paper to the Mechanical Engineers on locomotive experimental stations, strongly advocating the establishment of such plant in this country. His enthusiasm for this project is indicated by the fact that he made it the theme of both his presidential addresses to the Institution of Locomotive Engineers, and when he delivered his presidential address to the Institution of Mechanical Engineers in 1936 on the subject of locomotives at high speeds, Gresley was able to express optimism about the proposition to build a locomotive testing plant in England, and the project would by now have been realised but for the intervention of the war. This presidential address dealt mainly with the development of high-speed train services since the inauguration in 1932 of the Flying Hamburger of the German State Railway. The possibilities of high-speed travel had been brought home to him by a journey in the Flying Hamburger, but Gresley was a strong advocate of steam, and his own first high-speed train was the streamlined Silver Jubilee which averaged 71 m.p.h. between Darlington and London. The success of the Silver Jubilee led to the inception of other streamlined steam trains not only on the L.N.E.R. but also on the L.M.S.R. To the Institution of Civil Engineers, Gresley contributed in 1922 jointly with the late Sir Henry Fowler a paper on trials in connection with the application of the vacuum brake to long freight trains, and to the Institute of Transport his most notable contributions were two papers, one in 1923 on wagon stocks on British railways, and the other on the Frölich hydraulic brake at March concentration yard in 1929. Two subjects with which he was intimately connected, valve gear for three-cylinder locomotives, and alloy steels for coupling and connecting rods, formed the subject of short papers to the Institution of Locomotive Engineers in 1921. Although Gresley wrote much for the technical institutions, he never wrote for the technical press. Nevertheless, he was always most helpful in facilitating accurate descriptions of L.N.E.R. works, and so recently as the week of his death had returned corrected proofs of an instalment of the series of articles on his locomotives now appearing in our monthly contemporary *The Railway Magazine*. Among other of Gresley's activities were membership of four committees of the British Standards Institution, namely, those on Mechanical Industry, the Iron & Steel Industry, Locomotive

& Railway & Tramway Rolling Stock Material, and Coal & Coke. In addition Gresley had been Chairman of the Board of Trade Committee on Steering Gear of Ships and a member of the Ministry of Transport Committees on Automatic Train Control, and Railway Electrification (the Pringle Committee). In connection with electric traction his responsibility for the electrification of the Sheffield-Manchester, and London-Shenfield electrification schemes may be recorded. For the former the first of a number of electric locomotives has only recently been completed.

The main-line passenger rolling stock of the Great Northern, and latterly of the L.N.E.R., was always notable for comfort and smooth riding, and these qualities were attributable to Gresley's characteristic enthusiasm for the best. Probably his most notable contributions to the development of carriage stock were the now standard L.N.E.R. double-bolster bogie and carriage articulation, by means of which two or more coach bodies were carried on three or more bogies in place of the normal two bogies for each carriage. He was also responsible for the introduction in this country of electric cooking on trains, a practice now widespread on the L.N.E.R.

On November 26, 1937, he was the recipient of an unusual compliment when Mr. William Whitelaw, then Chairman of the L.N.E.R., unveiled at Marylebone station the nameplates of the L.N.E.R. Pacific locomotive, No. 4498, to which the name *Sir Nigel Gresley* had been assigned, and presented Sir Nigel with a model of the engine in silver. This was the 100th Gresley Pacific of the L.N.E.R., and Mr. Whitelaw aptly described it as one of the most beautiful examples of locomotive engineering, and added that Sir Nigel, its designer, occupied a foremost position in the whole world of mechanical engineering. In reply, Sir Nigel Gresley recalled that it was then 26 years since he had been appointed Locomotive Engineer of the former G.N.R., and said that during that period he had been responsible for the design and construction of between 1,400 and 1,500 locomotives, which must have cost upwards of £7 million. He paid a deserved tribute to the drivers who worked these engines and secured such wonderful results from them in all sorts of conditions.

The funeral took place on April 9 at Netherseale, Burton-on-Trent, and a memorial service was held simultaneously in London at Chelsea Old Church.

NEW SOUTHERN RAILWAY DIRECTOR

To fill the vacancy on the board caused by the retirement on December 31 of Lord Rockley (whose death on April 1 we recorded last week), the directors of the Southern Railway Company have co-opted Sir William Crawford Currie.

The Minister of Shipping has appointed the following as his regional representatives :—

Bristol Channel Ports.—Sir William Reardon-Smith, Mr. Hill, Mr. Hinde, and Mr. Rees, district representatives for Bristol, Cardiff, and Swansea respectively, will continue their present duties.

Sir William Reardon-Smith is president of the Bristol Channel Shipowners Association. He was a member of the committee formed in 1935 to promote better employment of British ships. He is a Director of Sir William Reardon-Smith & Sons Ltd. and is on the board of many other companies associated with shipping.

Ports from Holyhead to Silloth, inclusive.—Mr. J. R. Hobhouse, Mr. Torrey and Mr. Stoker, district representatives for Liverpool and Manchester respectively, and Mr. Taylor, deputy representative for Barrow-in-Furness, will continue their present duties.

Mr. J. R. Hobhouse is a Director of Alfred Holt & Co. Ltd., and Vice-Chairman of the Liverpool Steam Ship Owners' Association.

Clyde Area.—Mr. J. C. Denholm. Mr. Denholm will also continue to act as the Ministry's representative for Glasgow, and Mr. Needham, the Ministry's representative for Greenock, will continue his present duties.

Mr. J. C. Denholm is Chairman of the Denholm Line and Director of the Glasgow & Clyde Shipowners Association.

In each case the regional representative will be concerned with all matters affecting the expeditious handling of commercial deep-sea shipping within his area, and will work in close co-operation with the district and deputy representatives, and with all the authorities whose functions relate to the turn-round of ships. He will also be available for consultation by shipowners and agents who desire his advice or have suggestions to make. (*See editorial note, p.* 413.)

Sir Thomas A. L. Brocklebank, Vice-Chairman of the Mersey Docks & Harbour Board, was, on April 3, elected Chairman in succession to the late Sir Richard D. Holt.

Mr. E. C. Teague, for many years Works Manager of British Timken Limited, has retired. He has been 27 years with the company.

Mr. D. McNicoll, Deputy Works Manager, has been appointed Works Manager, in succession to Mr. Teague.

Mr. C. R. D. Tuckey, recently appointed Chief of The Planning Department, has been made Assistant Works Manager.

Mr. A. Whiston has been appointed Works Manager of the Fischer Bearings Co. Ltd.

We regret to record the death, on March 21, of Major Percy Sidney Inskipp. He was born in London in 1871, and early in 1890 at the Cape he signed on with the famous Pioneer Column which occupied Mashonaland in the same year. Dr. Jameson placed Inskipp in charge of the company's supply and transport services after the hoisting of the flag at Salisbury. He worked for some years in Africa and became Secretary and later Manager of the commercial branch of the British South Africa Company. Major Inskipp served in the Army during the war of 1914-1919. He was awarded the Military O.B.E. At the end of the war he was elected a Director of the British South Africa Company, and a Member of the executive committee. For about six years, until 1928, he was General Manager of the company.

Lord Abertay (formerly Sir Charles Coupar Barrie), whose death we recorded in our December 13 issue, has left estate valued at £296,518. Lord Abertay was a Director of the London & North Eastern Railway and of the Central Argentine Railway, and of various other commercial and industrial concerns.

Mr. Michael J. O'Brien, railway contractor for various Canadian railways, whose death we recorded in our January 17 issue, has left estate valued at over five and a quarter million dollars.

Staff & Labour Matters

Industrial Court Awards

Farriers—London, Award No. 1791

The parties to the issue were the London District Committee of the Amalgamated Society of Farriers & Blacksmiths and the London District Committee of the National Master Farriers' & Blacksmiths' Association, and the claim was that the wages of firemen and doormen be increased by 2s. a day. In opposing the claim the employers referred to the competition to which they were subjected from non-associated employers paying lower rates than those observed by the associated employers, the falling off in business and the increased cost of the materials used by them owing to the war.

The Court decided that firemen and doormen who are covered by the present reference and who are at present employed in the establishments of the employers concerned situated within 12 miles of Charing Cross, shall be given an increase at the rate of 3s. a week from the beginning of the first pay week in January, 1941, and a further increase of 3s. from the beginning of the first pay-week after March 13.

Markers-Off employed on board Ship, Award No. 1792

The parties to the issue were the Amalgamated Engineering Union and Vickers Armstrongs Limited, Barrow-in-Furness, and the claim of the union was that the rate of wages of markers-off employed on board ship should be raised to the same level as that paid to markers-off in the shops.

The court ruled that markers-off should be paid at a rate not less than 2s. a week above the rate for qualified fitters.

XUM

TRANSPORT SERVICES AND THE WAR—85

Easter travel restrictions—Summer Time—War Transport Council—Clearing the ports—Civilian air raid casualties—Wagons-Lits services—The war in East Africa and the Balkans

The movement of freight traffic will continue throughout the Easter holiday without interruption, and members of the public are asked to refrain from travelling as far as possible. No special facilities can be provided for the holiday. Managements of factories and works not closing for the holiday have been asked to get in touch with transport undertakings to make sure that suitable and adequate transport services are available.

Summer Time

Summer time was introduced in Portugal on Sunday last, April 6; it will begin in Egypt on April 14. Ulster is to fall into line with Great Britain by extending summer time to two hours, but the Government of Eire does not propose to do so.

A Defence Regulation has been made by Order in Council giving effect to the Home Secretary's recent announcement of an additional hour of summer time in Great Britain. The clock is already one hour in advance of Greenwich mean time, and the Regulation provides that, from the first Sunday in May to the second Sunday in August, summer time shall be two hours in advance of Greenwich mean time. The hour at which the change is to take place on Sunday, May 4, is 1 a.m. Greenwich mean time, which means 2 a.m. by the clock under the present conditions of summer time. At that hour the clock will be advanced another hour. The two-hour period of summer time will come to an end at 1 a.m., Greenwich mean time, on Sunday, August 10, when the clock will be put back one hour. Special provision is made in the Regulation to ease the situation in the agricultural industry. The working day in agriculture will remain as at present (namely, on the one-hour summer time basis) and milk trains will be re-timed accordingly.

War Transport Council

On April 5 it was announced that the Minister of Transport had decided to set up immediately a War Transport Council, whose function it would be to advise the Minister on questions of transport policy. In addition to examining all matters which the Minister might refer to them, members would be invited to put forward any proposals which, in their view, would increase the contribution that transport was making to the war effort. The following accepted invitations to serve on the council under the chairmanship of the Minister :—

W. P. Allen, General Secretary, Associated Society of Locomotive Engineers & Firemen.
Rt. Hon. Sir Arthur Griffith Boscawen, Chairman, Transport Advisory Council.
Arthur Deakin, Acting General Secretary, Transport & General Workers' Union.
John F. Heaton, Chairman & Managing Director, Thomas Tilling Limited.
Lt.-Colonel Sir Maxwell Hicks, C.B.E., Chairman, McNamara & Co. Ltd., and Allied Transports Limited.
Colonel Sir William Prescott, C.B.E., Chairman, Lee Conservancy Board, and late Chairman, Metropolitan Water Board.
J. D. Ritchie, M.C., General Manager to the Port of London Authority.
Rt. Hon. Lord Stamp of Shortlands, G.C.B., G.B.E., Chairman & President of the Executive, London Midland & Scottish Railway.

The Parliamentary Secretary to the Ministry of Transport, Mr. F. Montague, together with the Permanent Secretary, Sir Leonard Browett, K.C.B., C.B.E., and the Deputy Secretary, Mr. R. H. Hill, C.B., are also to serve on the council. The Secretary is Mr. S. W. Nelson, Ministry of Transport.

Handling of Shipping in Home Ports

The tenth report of the 1940-41 session from the Select Committee on National Expenditure was made public on April 2. The Select Committee was established by Parliament shortly after the outbreak of war for the purpose of examining current expenditure defrayed out of monies provided by Parliament for the Defence Services, for Civil Defence, and for other services directly connected with the war, and to report what economies consistent with the execution of the policy decided by the Government might be effected. The tenth report, which deals with the handling of shipping in ports, is the 24th in the series which the Select Committee has issued. This investigation was conducted by a sub-committee on transport services, the report of which has been considered and adopted with amendments by the Select Committee. The sub-committee makes it clear that on the arrival of ships at home ports and until they sail again, the Ministry of Transport and not the Ministry of Shipping is responsible for the discharge and loading of cargoes. The former Ministry is also responsible for clearing the ports of goods and it is here more than anywhere else that congestion persists. Warehouses and quays get filled to overflowing; there is room neither to accommodate the mass of incoming cargoes, nor the flow from inland of goods to be shipped. A convoy system thus brings an enormously large tonnage to certain ports which inevitably makes for congestion. Therefore a larger exhaust pipe than normal is required if the ports are to be emptied rapidly.

The sub-committee believes it to be true even in present circumstances that a ship can always be unloaded and loaded again more quickly than transport can take traffic from or bring traffic to the ports. It does not follow, however, that there are no difficulties in handling cargoes to and from the ships in port. The sub-committee is satisfied that there have been, and still are, delays in these operations which could be shortened. The efficiency of labour varies between port and port. At some ports work ceases during periods of alert in daylight and there have been cases where the men have not sought shelter and have remained on decks. The re-organisation of the conditions under which labour is to be employed and remunerated at the ports will, it is expected, increase the cost of handling cargoes. This re-organisation will be the task of the Ministry of Labour, but the actual employment of labour will be the responsibility of the Ministry of Transport which will charge out to the companies and undertakings, thus save the cost of providing labour services. If, however, the speedier turn-round of ships is thus secured and if the accumulation of merchandise at the docks can be cleared by the railways the increased cost of labour may be fully recouped.

To evacuate the ports rapidly, the sub-committee finds that there is a pressing need for more railway wagons of special types. The type of import has in some important respects changed. Much fabricated material of greater length and heavier weight is now obtained from overseas. This class of cargo can only be handled conveniently on the railways in wagons of special type; some of them are building. Their manufacture should be speeded up. The sub-committee understands that the Minister of Transport has under consideration a scheme for organising a pool of road transport lorries to be used as a piece of Government emergency machinery. This pool may prove of material assistance in evacuating freight from congested ports, although there is an obvious limit to the use of lorries in this respect as compared with railway wagons. Nevertheless, material help may be possible in moving considerable quantities of the lighter type of cargo which would otherwise occupy space without much weight in railway wagons.

At the more important ports, Port Emergency Committees are in operation. On these committees are representatives of the port authorities, rail, road, labour, employers, traders, the Ministry of Shipping, and overseas shipping owners. It may be said that these large emergency committees are too unwieldy for rapid action and too much consultation is involved where rapid action is vital. It is for this reason that certain appointments of regional port directors have been made by the Minister of Transport. These directors will, in effect, represent the Minister himself at the ports; the main purpose of their appointment is to enable quick decisions to be given where conflicting interests may arise. These appointments have been welcomed as sound in principle. Time alone will show whether they have succeeded in their objective and whether

the appointment of some men as regional port directors without previous experience of all the ramifications of shipping and port management, is likely to bring success in discharging adequately and efficiently the very onerous responsibilities involved in securing the rapid clearance of both ports and ships.

The sub-committee made inquiry into the possibility of delays in the turn-round of ships while in overseas ports and report that there would appear to be little of which to complain in this respect. Great advantages would follow the loading of ships overseas which could be unloaded at one port at home. Greater discrimination might be shown at overseas ports in selecting cargoes for ports of delivery which entail the shortest inland transport after delivery. The sub-committee understands that whereas the Ministry of Shipping has experienced representatives at the most important overseas ports, the Ministry of Transport is not represented, although the latter Ministry is responsible both for the unloading of cargoes on the arrival at home ports and for transmitting them inland to the establishments of consignees. It is therefore suggested that the possibility of closer co-operation between the Ministry of Shipping and the Ministry of Transport at overseas ports should be investigated with a view to the better organisation and subsequent inland distribution. In conclusion, the sub-committee is convinced that in order to improve the use of shipping, the growing need is to speed up the passage of goods through the ports and that this is not a shipping but a transport problem. In the view of the sub-committee the responsibilities thrown on the Ministry of Transport are already so heavy and may easily become so much more grave, that only new and drastic methods can loosen the present strain. It therefore recommends that immediate instruction should be given to the Railway Executive Committee under the instructions of the Ministry of Transport for drastic reductions to passenger services on specified days.

Civilian Air Raid Casualties

The Minister of Home Security has announced that during March 4,259 civilians were killed and 5,557 were injured and detained in hospital, due to air raids on the United Kingdom. The totals were divided as follow:—

Men.—1,956 killed, 3,067 injured.
Women.—1,500 killed, 2,077 injured.
Children under 16.—598 killed, 413 injured.
The remaining 205 persons killed are not classified.

The figures, which include the Merseyside and Clydeside raids, are the fourth highest since intensive raids began in September last. In that month 6,954 were killed and 10,615 seriously injured; 6,334 were killed and 8,695 injured in October; and 4,588 were killed and 6,202 injured in November. The decline in casualties continued until February, when the lowest totals for six months were recorded, namely, 789 killed and 1,068 injured.

Left: A poster to further the "Travel Early" campaign issued by the General Production Division of the Ministry of Information. About 7,500 16-sheet posters are being used, and some thousands of smaller posters are appearing in buses, trams, trains, shops, and stores. The posters were designed by London Press Exchange Limited

L.M.S.R. Travelling Canteens for the Forces

The experimental train canteens for troops introduced by the L.M.S.R. between London and Glasgow and *vice versa* in conjunction with the War Office, the Y.M.C.A., and the Salvation Army authorities, are to become a permanent feature on certain express trains between these two points. Beginning on Monday last, April 7, special third class dining cars for members of the Forces only are provided on weekdays on the 10 a.m. Euston to Glasgow and the 10 a.m. Glasgow to Euston, the former manned by the Salvation Army and the latter by Y.M.C.A. workers. It is hoped to extend these arrangements at a later date to include the 1 p.m. Euston—Glasgow and the 1 p.m. Glasgow—Euston trains. These canteens serve hot drinks, sandwiches, meat pies, biscuit, and chocolates. at popular prices.

War Gift from Argentine Railwaymen

Ever since the outbreak of the war, the practical sympathy and moral support of the vast majority of the Argentine people have been extended to Great Britain and her allies. A notable instance of this was the donation by the leading Argentine stock-breeders of several thousand tons of frozen meat for the use of H.M. Forces. Fresh proof of the friendly sentiments with which the Argentine people regard Great Britain has been furnished by the prompt and generous action of the Argentine and other non-British members of the staff of the B.A.G.S., B.A.W., and B.A. Midland Railways who, in response to a cable from London appealing for mobile kitchens, voluntarily subscribed a sum equivalent to £3,000 for the purpose of buying 15 of these kitchens; the donation was cabled to London. It is proposed to affix a plaque to each of the kitchens.

Canadian National War Equipment

More than $2,500,000 were appropriated by the Canadian National Railways to provide additional facilities for wartime traffic on the Atlantic Region, in the form of increased yard and siding capacity to the extent of 12·87 miles of extension and 28 miles of new siding; to provide a new locomotive erecting shop at Moncton and a locomotive terminal at Fairview, just outside of Halifax; a 250-ton coaling plant at Campbellton; and a six-engine extension to the locomotive-house at Edmundston, a 100-ton coaling plant at Chipman, a locomotive crane for handling ashes, etc., and a double-track ash pit. The Moncton shop covers an area of more than 80,000 sq. ft.; it is 543 ft. long by 154 ft. wide, and 63 ft. high crane. Equipment includes one of 200 tons capacity, two of 15 tons, and one of 10 tons. This shop is expected to be in use by the beginning of June next. The Fairview locomotive terminal will accommodate 18 engines, and will have a 100-ft. turntable; it is on the point of completion. Yard capacities have been increased by a total of 1,808 cars. The capacities of the terminals in and around Halifax have risen by 515 cars, the Moncton yards by 952, and Truro yard by 341 cars. The increase in yard trackage gives Halifax a total capacity of 5,722 cars, Moncton 2,954, and Truro 1,470. The capacity of St. John yards totals 1,891 cars.

The Point St. Charles (Montreal) freight car shop, in addition to attending to urgent maintenance and repair work, was able to turn out one new caboose—and sometimes two—every working day during November and December last. It built a total of 50.

Wagon Building in the U.S.A.

The general improvement in the American railway position, due largely to the increased freight traffic created by war conditions in Europe, is seen by the enormous scale of current orders in the United States for freight rolling stock. For example, the Pennsylvania Railroad has on order at the present time in its own shops 2,500 gondola cars, 2,000 50-ton box wagons, 600 bulk container cars, and 200 caboose cars—5,300 vehicles in all. The Union Pacific is similarly building in its own shops 2,250 50-ton box cars of different types, and is enquiring for 300 flat cars and 50 mill-type gondola cars, 2,600 wagons all told. The Northern Pacific has placed

orders with outside builders for 2,500 cars, comprising 2,000 50-ton box cars, 300 50-ton hopper wagons, and 200 70-ton ballast wagons. As is customary in American practice, all the foregoing are bogie vehicles. Progress in mass production is well illustrated by the order for 1,000 50-ton steel-sheathed box cars now in course of construction by the Chicago, Burlington & Quincy in its own shops; by specially devised methods, in a converted locomotive shop which with accessory shops such as the tool room occupies a building of which the total area is only 602 ft. × 216 ft., 25 completed vehicles are being turned out every two days. During 1940 Class 1 American railroads put into service a total of 65,545 new wagons, as compared with 24,528 in 1939, and the year 1941 bids fair to see a further increase.

Standard Time in the U.S.A.

No formal matter involving standard time in the U.S.A. has come before the Interstate Commission since 1937, and no change in the boundaries of the several time zones has been made in the past four years. In its recently-issued 54th annual report (dated November 1, 1940) the Interstate Commerce Commission states that it has repeatedly directed the attention of Congress to the confusion and inconvenience, and sometimes danger, which has resulted from the independent adoption by individual States or their subordinate municipal agencies of a standard of time differing from that provided by the Standard Time Act. It adds that the failure of that Act to accomplish its stated purpose, namely, "to provide standard time for the United States," might prove a serious matter should the confusion and inconvenience now experienced by business men and travellers be extended to those engaged in furthering the nation's defence preparations. Accordingly the Interstate Commerce Commission renews its recommendation that Congress amend the Standard Time Act "so as fully to occupy the legislative field respecting the standards of time to be observed throughout the nation."

Switzerland and Refugees

Since September, 1939, 7,300 foreign refugees who cannot return to their own countries have entered Switzerland. That country, it is officially stated, can give only temporary asylum to 6,000, who must leave as soon as they can. The remainder will not be asked to leave for the present, and some may remain permanently, particularly about 800 who are over 60 years of age. There are obvious transport difficulties in connection with the movement of those refugees who are being asked to leave Swiss soil.

Wagons-Lits Services

As in 1914, the war in Europe has had a paralysing effect on the services of the International Sleeping Car Company. During 1940 all the company's international services through Holland, Belgium, and Denmark were discontinued owing to the German occupation of those countries. In France the company's services were suspended in May and June, but resumed in July, though to the extent of only about 20 per cent. of the pre-collapse level. In Poland and Germany the services have been placed under State supervision. In Estonia, Latvia, and Lithuania, the company's plant and material were nationalised as a consequence of the absorption of these countries by the Soviet Union. Of the international sleeping car trains operated by the Wagons-Lits, the Orient Express to Istanbul was maintained up to March 1, but was then discontinued. In Turkey the Taurus Express is still being maintained. In Roumania, Hungary, Jugoslavia, Bulgaria, Greece, Turkey, Italy, Switzerland, Spain, Portugal, Egypt, and French North Africa, the company's services were maintained up to March 1, when Balkan transport was extensively disorganised. These operations have so far provided liquid funds for the company's immediate requirements.

Transport in Sweden

The great difficulties of the war situation led the Swedish Government to appoint special Traffic Commissioners on August 15, 1940, to deal with all transport questions arising therefrom. The Chairman is Herr A. Granholm, former General Manager of the State Railways, and the Vice-Chairman Herr C. E. Landberg, who previously held that office on the Board of Mercantile Marine, which has been combined with the new body. The Defence Forces are represented by Major K. G. H. Kring, and the remaining commissioners are the Secretary of the Swedish Roadways Association, Herr E. H. Nordendahl, and Herr A. E. Paulson, a Divisional Manager of the State Railways. An advisory council has been appointed to assist the commissioners, who are required to deal with every question that can affect the provision of the most satisfactory transport arrangements in the circumstances; the common user of rolling stock, as between State and private railways; the best use of ships and motor vehicles; fuels and lubricants; and harbour and dock facilities.

The necessity to save petrol has resulted in the suspension of several railcar services, some of which are replaced by steam trains. The railway bus services have also been much reduced. The resulting inconvenience and interruption to ordinary commercial work has given an impetus to the application of producer gas to various classes of vehicles. Parliamentary sanction has been given to the proposal of the State Railways to apply, at a cost of 1,050,000 kronor, producer gas apparatus to about 80 railcars, 25 shunting locomotives, and 110 road lorries.

The War in the Balkans

In addition to the severances of communications between Jugoslavia and her neighbours which we recorded at page 405 last week, railway communication between Jugoslavia and Bulgaria was suspended on March 28. The complete closure of the frontier between Jugoslavia and Hungary occurred on April 4, and the only frontier then open to rail traffic was that between Jugoslavia and Greece. On Friday last (April 4) it was officially announced in Belgrade that passenger trains throughout Jugoslavia would be cancelled indefinitely as from midnight (April 5-6) to leave the lines clear for military traffic. It was believed that this limitation to traffic would also prevent the movement of goods, including oil, into Italy and Germany.

In the early hours of April 6 (Palm Sunday) Germany invaded both Greece and Jugoslavia, and at midnight on that day it was officially announced that a British Imperial Force was already in Greece.

In Jugoslavia, Belgrade had been declared an open city but was nevertheless subjected to German air attack. Aircraft of the R.A.F. quickly replied (on April 6) by bombing German military concentrations at Sofia on the same evening. The main railway station and marshalling yards, the railway junction, warehouses, and motor transport shops, were heavily bombed.

Earlier news of transport in the Balkans which has recently come to hand include the statement, attributed to "a high diplomatic source in Belgrade," that Russia ceased sending oil to Germany on March 1 when the German army marched into Bulgaria.

A Bucharest radio broadcast on April 4 warned shipping that Roumanian territorial waters at the mouth of the Danube had been mined and that navigation would be permitted only between sunrise and sunset and would necessitate the employment of military pilots.

Railways and British Operations in East Africa

After the British Imperial Forces occupied Dire Douah on March 29 and thus made contact with the Abyssinian Railway, the advance on Addis Ababa developed rapidly along the line of the railway. The main obstacle was the gorge of the Awash river, which was crossed by the South Africans far more rapidly then had been expected in view of the fact that the retreating Italians had destroyed the steel girder bridge over the gorge. This bridge, which carried both road and railway, was 490 ft. long and 195 ft. high. A distance of 90 miles was then covered in two days and South African troops entered Addis Ababa, the capital of Abyssinia, on Saturday last, April 5. An illustrated article on the Abyssinian Railway appears at page 421 of this issue.

Since the capitulation without resistance of Asmara on April 1, our Forces have advnaced to within a mile or two of Massaua and have thus secured control of the Eritrea Railway; this line is described in an article at page 419.

RAILWAY AND OTHER MEETINGS

British Automatic Co. Ltd.

The ordinary general meeting of the British Automatic Co. Ltd. was held at Winchester House, London, E.C.2, on April 3. Major R. D. K. Curling, Chairman and Managing Director of the company, presided.

The Acting Secretary, Mr. Ivan B. Lindley, having read the notice convening the meeting and the auditors' report,

The Chairman said that since the last general meeting Major Dodge, one of the directors, had been taken prisoner of war.

On the assets side of the balance sheet, machines and fittings at £415,376 showed a decrease of £2,236, which was the difference between £7,139 being the book value of machines scrapped, sold, and given to the Ministry of Aircraft Production, and £4,903 the net cost of new machines purchased. Amounts due by subsidiary companies had been reduced by £5,686 to £432, and this was chiefly accounted for by a transfer from contingency reserve which represents the writing down of the company's interests in its Belgian subsidiary company to £1. Stocks of sweetmeat stores, etc., at £53,843 were down by £4,963, due to the rationing and restriction of supplies. As prices had considerably increased during the year, the actual stocks were relatively lower than this figure indicated. Cash on deposit, at bankers, and in hand, amounted to £79,116, an increase of £35,896, mainly due to the company having spent £10,000 less in the purchase of new machines, also to stocks being down by almost £5,000, a reduction in debtors of over £5,000, and an increase exceeding £9,000 in sundry creditors.

On the liabilities side debenture stock outstanding had been reduced by £4,830 to £228,639. Sundry creditors, including taxation reserve, at £85,297 had been increased by £9,180, and this was due to a reserve of £5,500 for war compensation insurance, £3,000 increase in taxation reserve, and the balance of £680 to an increase in sundry creditors. Depreciation and renewals account had been increased by £23,000 to £196,000 by the allocation of £34,458 out of profits for the year, less £11,456, the value of machines scrapped and otherwise disposed of.

Turning to the profit and loss account, he said that the net profit, subject to depreciation of automatic machines, amounted to £48,622 against £51,256 in 1939. With the balance brought forward—£7,550—there was a total of £56,172, from which had been allocated £34,456 to depreciation and renewals account. This left £21,716, and the directors recommended payment of a dividend of 6 per cent., less tax, which would absorb £13,800, leaving £7,916 to be carried forward.

Trading conditions for most commercial concerns had been very difficult during the past twelve months. Prices had been rising, but the company was in the unfortunate position of having a fixed selling price, and had been unable to pass on increased costs to its customers, with the exception of some cases where it had been compelled to reduce the weight.

The Railway Companies, with which it had long had cordial and satisfactory relations, had readily understood the company's difficulties. Their assistance had been very greatly appreciated, and he would here like to take the opportunity to thank their officers for the very willing and helpful way in which they have met the company at all times.

It was unfortunately true to say that many of the company's vending machines frequently stood empty, but under present rationing conditions this was largely unavoidable, added to the fact that they were invariably emptied by customers as soon as filled. As to supplies for the machines he was pleased to place on record the company's appreciation of the assistance it had received from its old trading friends, Nestlé Products Limited, and other suppliers. The chocolate factory in Glasgow—Reeves Limited—on which the company so largely depended for supplies had converted a loss in 1937 to a profit for the year under review of £18,000. In 1937 the directors of the British Automatic Company had overhauled and reorganised the trading policy of Reeves Limited, and this had undoubtedly been the means of putting new life into the business, but the greatest credit was due to the company's General Manager, Mr. F. L. Timmins, and to Mr. A. H. Brace, Manager of Reeves Limited, for their work in developing and improving the business ever since.

The weighing and amusement machine business had been very seriously affected by the war. Many of the amusement sites had been closed, and takings from this source had dropped by over 50 per cent.

The company had not been able to purchase its usual quota of new machines, but had continued the maintenance of those machines which were the backbone of the company. In response to Lord Beaverbrook's appeal, as Minister of Aircraft Production, for the public to supply him with aluminium for the purpose of building Spitfires, the company was able to send him over 4½ tons of aluminium, from a number of machines which were almost wholly composed of this material. These were written off in the books at a cost of £1,488, which the directors considered to be a small contribution to provide metal for the building of aeroplanes for our marvellous Air Force.

Despite the depletion of staff and other severe disturbances, the company was continuing, and would continue as long as it was within its power, to maintain the automatic machine service to the public, a service which had been unbroken for the past 53 years.

In conclusion, he expressed on behalf of the shareholders, sincere appreciation of the efforts of all who had contributed to the successful results obtained in a most difficult year. From the General Manager, Mr. F. L. Timmins, downwards, the company had an extremely loyal, keen, and hard-working staff. He also thanked his colleagues on the board for the assistance they had given him during a very trying period.

The report and accounts were unanimously adopted.

Railway and Other Reports

Sorocabana Railway Company.—No payment is recommended on the 5½ per cent. income first debentures in respect of Coupon 59, due April 1, 1941.

Dublin United Tramways Co. (1896) Ltd.—The report for the year 1940 shows total net revenue of £118,961 against £100,235 for 1939. Net tramway receipts were £180,445 (against £322,252) with expenditure of £185,145 (against £291,851). Net bus receipts were £1,007,437 (against £848,455) with expenses £715,114 (against £607,323). The ordinary dividend remains at 5 per cent. and £21,561 is carried forward.

Metropolitan Assented Stock.—Glyn, Mills & Co., the trustee and registrar, announces that holders of Metropolitan Assented Stock should in future receive payments in respect of the interest on their stock not later than May in the year 1942 and in subsequent years. If the trustee decides to make an interim distribution, interest on the assented stock should be received not late than November of each year. A distribution of 1⅛ per cent. actual (less tax) on the assented stock, being a final payment for the year ended December 31, 1940, was made on April 9, 1941.

International Sleeping Car Company.—After deduction of all charges, depreciation, and losses in Spain and Poland, the Wagons-Lits closed its financial year 1939 with a loss of 400,000 Belgian francs; no provision is included for depreciation of rolling stock. As far as interest service on the 4 per cent. Dutch loan of fl. 12,500,000 (1938) is concerned, the holders granted the company permission in February, 1940, to pay the first half year coupon only. In February, 1941, the company proposed to stop all payment of interest on this loan up to August 1, 1942. With the company's French and Belgian debenture holders a similar arrangement is being attempted.

William Beardmore & Co. Ltd.—A final dividend of 7 per cent. is recommended, making 10 per cent. for the year 1940.

Notes and News

Welsh Highland Railway.—Permission has been obtained to dismantle and sell as scrap the rails of the Welsh Highland Railway, a 2-ft. gauge line extending from Portmadoc to Dinas (near Caernarvon), which has been disused for some years.

Van Railway.—The Van Railway, from Caersws to the Van mines, in Mid Wales, is now being dismantled. This line, which was closed by the G.W.R. on November 4 last, formed the subject of an editorial note at page 450 of our November 1, 1940, issue.

North Western Air Transport Limited.—A special resolution that this company be wound up voluntarily and that Mr. Samuel Woodyer, F.C.A., be appointed liquidator for the purpose of such winding up, was duly passed at an extraordinary general meeting held in Liverpool on March 10, 1941.

Hungary an Enemy Destination.—The British Government has decided that Hungary is territory under enemy occupation. As from April 8, therefore, Hungary is regarded as an enemy destination for contraband purposes, and all goods of Hungarian origin or ownership are liable to seizure. The Board of Trade has announced that Hungary is enemy territory for the purpose of Trading with the Enemy Act.

L.M.S.R. Extension of Time Order.—The Minister of Transport has made the London Midland & Scottish Railway (Extension of Time) Order, 1941 (S.R. & O., 1941, No. 197), extending by 3 years the time limited by Sections 12 and 29 of the L.M.S.R. Act, 1937, for the acquisition of certain lands authorised by Section 32 of the L.M.S.R. Act, 1931, Section 13 of the L.M.S.R. Act, 1934, and Section 8 of the L.M.S.R. Act, 1937.

Closing the Clogher Valley Railway.—Tyrone County Council agreed on March 24 to the terms of the Northern Ireland Government for closing the Clogher Valley Railway. The terms are that the Ulster Ministry of Finance will undertake all liabilities, including payment to shareholders and compensation to employees, and will receive the net proceeds of the sale of railway property, buildings, and lands.

Agreed Charges.—Eighty-four applications have been lodged with the Railway Rates Tribunal for the approval of agreed charges under the provisions of Section 37 of the Road and Rail Traffic Act, 1933. Notices of objection must be filed on or before April 18.

Locomotive Valve Gears Limited.—An extraordinary general meeting of this company held on March 24, 1941, an extraordinary resolution was passed to the effect that as the company could not, by reason of its liabilities, continue its business, it be wound up voluntarily. Mr. Edgar Joseph Grande has been appointed liquidator.

Mr. T. H. Watermeyer—A Correction.—In our editorial reference last week to Mr. T. H. Watermeyer, who has recently retired from the general managership of the South African Railways & Harbours, the impression was given that Mr. Watermeyer was responsible for the construction of the main Cape Town—Johannesburg line through the Hex River Pass. In fact, this line was completed many years ago, and Mr. Watermeyer's influence was on its regrading and realignment to enable the main line to carry the greatly increased and accelerated traffic of recent years.

Two More Irish Wage Bonus Awards.—On March 24 the Irish Railway Wages Board announced two important awards. Members of the National Union of Railwaymen, the Associated Society of Locomotive Engineers & Firemen, and the Railway Clerks Association employed by the Great Northern, L.M.S.R. Northern Counties Committee, County Donegal Joint Committee and the Dundalk, Newry & Greenore Railway Company were granted, by a majority decision of the board, a bonus of 2s. 6d. a week for adults and 1s. 3d. for juniors from the first day period after the above date. The first two unions had applied for 7s. 6d. a week, and the third for a 15 per cent. increase. A similar award was made in favour of men of the three unions employed by the Belfast & County Down Railway Company, but in this case the N.U.R. and A.S.L.E. & F. members and claimed a 10s. increase, members of the R.C.A. again demanding 15 per cent. with a maximum of £30 a year. Some 5,700 employees will participate in these bonuses, which will cost the companies about £32,000 a year. The last award was in July last for a 2s. 6d. increase.

Irish Traffic Returns

IRELAND		Totals for 12th Week			Totals to Date		
		1941	1940	Inc. or Dec.	1941	1940	Inc. or Dec.
		£	£	£	£	£	£
Belfast & C.D. (80 miles)	pass.	2,724	4,618	— 1,894	33,221	28,740	+ 4,481
	goods	1,567	396	+ 1,171	13,252	5,882	+ 7,370
	total	4,291	5,014	— 723	46,473	34,622	+ 11,851
Great Northern (543 miles)	pass.	12,250	14,050	— 1,800	147,500	114,700	+ 32,800
	goods	19,900	9,600	+ 10,300	193,250	135,850	+ 57,400
	total	32,150	23,650	+ 8,500	340,750	250,550	+ 90,200
Great Southern (2,049 miles)	pass.	33,588	38,410	— 4,822	402,055	349,787	+ 52,268
	goods	55,822	40,739	+ 15,083	605,261	509,788	+ 95,473
	total	89,410	79,149	+ 10,261	1,007,316	859,575	+ 147,741
L.M.S.R. (N.C.C.) (247 miles)	pass.	7,500	5,650	+ 1,850	81,570	49,590	+ 31,980
	goods	7,810	2,720	+ 5,090	76,930	39,440	+ 37,490
	total	15,310	8,370	+ 6,940	158,500	89,030	+ 69,470

Easter week, 1940.

British and Irish Railway Stocks and Shares

Stocks	Highest 1940	Lowest 1940	Prices April 8, 1941	Rise/Fall
G.W.R.				
Cons. Ord.	52	22½	33	−1
5% Con. Pref.	103½	58	93½	—
5% Red. Pref. (1950)	105½	88	102	—
4% Deb.	107½	90½	110½	—
4½% Deb.	108½	96¼	113	+1
4½% Deb.	114¼	96	115½	—
5% Deb.	124	106	130	+5½
2½% Deb.	66½	57	66	—
5% Rt. Charge	117½	97	127½	+1
5% Cons. Guar.	117	90½	125½	+1
L.M.S.R.				
Ord.	24⅞	9	12¾	−½
4% Pref. (1923)	60½	21⅜	38½	—
4% Pref.	70¾	35	55½	−1
5% Red. Pref. (1955)	94¼	60	84½	—
4% Deb.	101¼	81	102½	—
5% Red. Deb. (1952)	109½	102	109	—
4% Guar.	93¾	65	93½	−1
L.N.E.R.				
5% Pref. Ord.	8⅜	1½	2⅜	−½
Def. Ord.	4⅜	1¼	1⅜	—
4% First Pref.	60	20	37½	—
4% Second Pref.	22⅞	6½	13	—
5% Red. Pref. (1955)	80	34½	60½	—
4% First Guar.	86½	56	84½	—
4% Second Guar.	77½	37	69½	—
3% Deb.	73½	54¼	75	−1
4% Deb.	97⅜	74	99½	—
5% Red. Deb. (1947)	107	96¾	104	—
4½% Sinking Fund Red. Deb.	104	98	102½	—
SOUTHERN				
Pref. Ord.	79	34	48½	−1
Def. Ord.	22½	7	10¾	−¼
5% Pref.	104½	58¾	90½	—
5% Red. Pref (1964)	105	85	100½	—
5% Guar. Pref.	116¾	90	124	—
5% Red. Guar. Pref. (1957)	114 7/16	94	113½	+1
4% Deb.	106¾	84¼	109¼	—
5% Deb.	122½	100	128¼	+3
4% Red. Deb. (1962–67)	106	96½	106	—
4% Red. Deb. (1970–80)	106⅜	93	106	—
FORTH BRIDGE				
4% Deb.	95½	87	93½	—
4% Guar.	93½	81½	91½	—
L.P.T.B.				
4½% "A"	116	103	118½	+½
5% "A"	121½	107	124½	—
4½% "T.F.A."	105½	101	102½	—
5% "B"	116	102	113½	—
"C"	65½	24	31½	+½
MERSEY				
Ord.	26	18½	21½	—
4% Perp. Deb.	92½	86¾	92½	—
3% Perp. Deb.	68	63	67½	+5
3% Perp. Pref.	57	50½	53½	—
IRELAND				
BELFAST & C.D.				
Ord.	4	3	4	—
G. NORTHERN				
Ord.	4½	1½	4½	—
G. SOUTHERN				
Ord.	12½	4	8	—
Pref.	15½	6	10	—
Guar.	36	15	19½	−3½
Deb.	55½	40	52	−1

OFFICIAL NOTICES

OFFICIAL ADVERTISEMENTS

EXPORT Engineering Business—Firm of Engineers desire to purchase well established business with overseas connections engaged in engineering and machine trades. Box No. 769, c/o *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is noon on Wednesday. All advertisements should be addressed to :—*The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

Universal Directory of Railway Officials and Railway Year Book

46th Annual Edition, 1940-41

This unique publication gives the names of all the principal railway officers throughout the world together with essential particulars of the systems with which they are connected. Much general and statistical information about railways is also concisely presented.

Price 20/- net.

THE DIRECTORY PUBLISHING CO., LTD.
33, Tothill Street, Westminster, S.W.1

QUESTIONS IN PARLIAMENT

Glasgow Docks Clearance

Colonel Sir Charles MacAndrew (Bute and North Ayrshire—C.), on March 26, asked the Minister of Transport whether he was satisfied that there were sufficient motor transport to clear the docks at Glasgow, so that ships were not delayed in the discharge of their cargoes.

Lt.-Colonel Moore-Brabazon : I am satisfied that there is at present no shortage of road vehicles for this purpose.

Sir Charles MacAndrew next asked the Minister of Transport, to what extent lack of warehouse accommodation in the Glasgow area was retarding the clearance of docks and delaying the turn-round of ships.

Lt.-Colonel Moore-Brabazon : Lack of storage accommodation in the Glasgow area is not at present retarding quay clearance or delaying the turn-round of ships ; but the present reserve is insufficient to meet possible demands and further suitable accommodation is being sought. An officer was recently appointed in south-west Scotland to see that the best use was made of suitable premises.

Mr. Davidson : Will the Minister investigate the statements which have been made that private railway agreements with the docks are very heavily retarding the unloading and return of ships ?

Lt.-Colonel Moore-Brabazon : I can answer that straight away. That is not so.

Mr. G. Buchanan (Glasgow, Gorbals—Lab.) : Is not the Minister aware that the position in Glasgow is well known to any ordinary observer ? Will he not take some interest in this matter himself and put it right ?

Lt.-Colonel Moore-Brabazon : The position at Glasgow is not at all bad. It is probably as good as in any other of the Western ports.

Mr. Davidson : Will the Minister deny categorically that there is a private agreement between the L.M.S.R. and the L.N.E.R. at the Shieldhall docks ?

Mr. R. J. Taylor (Morpeth—Lab.) : Is the Minister aware that it is alleged that we are working on an entirely peacetime basis ?

Mr. R. De La Bere (Evesham—C.) : Is it deliberate that we should be eternally deceived ?

The Minister did not reply to these questions.

War Workers' Facilities

Sir Robert Young (Lancaster, Newton—Lab.), on April 2, asked the Minister of Transport whether he was aware that many of the inhabitants of a township of which he had been informed were employed at a Royal Ordnance Factory ; that accommodation was being sought for an increasing number of workpeople from outside ; that the carrying of workpeople from and to the aforementioned factory was far from satisfactory ; the train journey involving several changes was inconvenient and slow, causing loss to workers and employers through unpunctuality ; and whether, in those circumstances, he would investigate the need for a through omnibus service and thus expedite the transport of the workpeople, many of whom were women.

Mr. F. Montague (Parliamentary Secretary to the Ministry of Transport) : I am sending my hon. friend a report on the subject, from which he will see that the criticisms made of the transport arrangements are not justified.

Sir R. Young : Has the Parliamentary Secretary received any communication from the local authority ?

Mr. Montague : No, Sir, but we have a communication from the Comptroller-General of Transportation to the Ministry of Supply. If my hon. friend would like to see that before he gets my letter, I will let him see it after Questions.

M. of T. Public Relations Officer

Commander R. T. Bower (Cleveland—C.), on April 2, asked the Minister of Transport what were the functions of the Public Relations Officer in his Department ; what was the salary attached to the office ; and how the salary compared with that of officers holding similar offices in other Government Departments.

Mr. F. Montague (Parliamentary Secretary to the Ministry of Transport) : The function of the Public Relations Officer is to explain and interpret to the public the nature and necessity of the steps taken in the Department and by the organisations acting under the Minister of Transport's control or direction to secure the best use of transport for the war effort. In this way, the fullest measure of co-operation of all concerned is obtained. The salaries paid to Public Relations Officers throughout the Service vary considerably, as do, so I understand, the duties and responsibilities attaching to the office. The salary attached to the office in the department is £1,700.

Commander Bower : Will the Parliamentary Secretary explain in what respects his relations with the public have so deteriorated as to necessitate the appointment of an officer in receipt of a salary so much in excess of that paid by other departments to similar officers ?

Mr. Montague : It is not true that it is in excess of salaries paid in some other Departments. With regard to a Public Relations Officer, the House will realise that transport is exceedingly important and publicity attached to the subject is important at the present moment.

British Bondholders in China

Sir John Wardlaw-Milne (Kidderminster—C.) has received a written reply to the question he addressed to the Secretary of State for Foreign Affairs on March 26 asking what provision had been made for the protection of British bondholders in view of the fact that it was their money which built the Shanghai-Nanking Railway and the Tientsin-Pukow Railway, and that these concerns were now controlled by a Japanese company with revenues of about 1,000,000 yen a month.

Mr. R. A. Butler (Under Secretary of State for Foreign Affairs) in his reply stated that the Government had made repeated representations in respect of both these railways requesting that arrangements should be made to meet the obligations to the British bondholders and to allow the British railway staff to function in accordance with the provisions of the loan agreements. He regretted that no satisfaction had yet been received.

Parliamentary Notes

G.W.R. Directors' Qualification Bill

The Great Western Railway (Variation of Directors' Qualification) Bill was read a third time and passed in the House of Commons on April 2.

Forthcoming Meetings

April 17 (*Thurs.*).—**Rohilkund & Kumaon Railway Co. Ltd.** (Ordinary general), 237, Gresham House, Old Broad Street, E.C., at noon.

April 17 (*Thurs.*).—**Bengal & North Western Railway Co. Ltd.** (Ordinary general), 237, Gresham House, Old Broad Street, E.C., at 12.30 p.m.

Railway Stock Market

Although the stock and share markets were overshadowed by the acceleration of the war, and at the beginning of the week security values were marked down as a precautionary measure, no heavy selling developed. As was to be expected, the volume of Stock Exchange business was very small, but following the Budget speech, markets tended to improve, sentiment being assisted by the removal of uncertainty as to the directions in which new taxation has to be faced. In fact, the Chancellor's decisions were not more severe than had been generally expected in existing conditions. Interest attached to the announcement that he is examining the question of how far the Exchequer might help in averting further increases in railway rates and fares. As was to be expected, home railway securities reflected the reactionary tendency of markets earlier in the week, but subsequently they showed a firmer trend, although at the time of writing there has not been a revival of the upward movement in prior charge and allied stocks. Nevertheless, the latter is expected in many quarters, bearing in mind that railway prior charges offer yields which compare very favourably with those obtainable on many other high grade investment securities, despite the fact that in recent weeks they have shown a good rise on balance and in some cases are now well above the highest prices recorded last year.

Great Western ordinary reflected the general market tendency, and at 32½ was below the price current a week ago; the 4 per cent. debentures were 110, and the 5 per cent. consolidated stock at 124½ lost a part of the recent further rise. Great Western 5 per cent. preference was little changed at 92½, at which the yield is on the large side, and exceeds 5⅜ per cent. Southern 5 per cent. preference, now around 90, also gives an attractive yield, and the 4 per cent. debentures yield over 3⅝ per cent., or slightly more than the return on Great Western 4 per cent. debentures. Southern 5 per cent. preferred was slightly lower at 48½; in this case the yield now exceeds 10 per cent., although the assumption in many quarters is that there are reasonable grounds for expecting this stock to receive its full 5 per cent. dividend throughout the period of the war. A substantial yield is also obtainable on L.M.S.R. 4 per cent. 1923 preference, now around 38½, while the 4 per cent. senior preference at 55 yields over 7¼ per cent. Moreover, at 93½, L.M.S.R. 4 per cent. guaranteed returns nearly 4¼ per cent., which is attractive, bearing in mind the excellent investment merits of this stock. L.M.S.R. 4 per cent. debentures at 103 also offer a good yield, which, in fact, is only slightly below those obtainable on L.N.E.R. debentures. L.N.E.R. second guaranteed was lower on balance, in accordance with the prevailing tendency on the Stock Exchange, and in this case the yield is around 5¾ per cent. Moreover, at the current price, L.N.E.R. first preference returns more than 10¼ per cent., and the yield on the second preference stock is not far short of 15 per cent. Even allowing for uncertainties as to the basis on which the financial agreement with the Government will be revised, yields on home railway stocks are attractive. There is, of course, every reason to believe that the interest requirements of the prior charge stocks will continue to be earned with a good margin during the war.

The possibility of increased grain shipments to Britain has aided sentiment in regard to Argentine railway securities, but there was little attention given to the latter, apart from the debentures. Central Argentine debentures have now shown a small response to the better tendency. Elsewhere, Leopoldina debentures had a steadier appearance, but San Paulo ordinary lost part of the recent improvement, awaiting the dividend decision. Canadian Pacific issues were steady.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

	Railways	Miles open 1940–41	Week Ending	Traffic for Week: Total this year	Traffic for Week: Inc or Dec. compared with 1940	No. of Weeks	Aggregate Traffics to Date: Totals: This Year	Aggregate Traffics to Date: Totals: Last Year	Aggregate Traffics to Date: Increase or Decrease	Shares or Stock	Prices: Highest 1940	Prices: Lowest 1940	Prices: April 8, 1941	Yield % (See Note)
				£	£		£	£	£					
South & Central America	Antofagasta (Chili) & Bolivia	834	30 3.41	19,690	– 7,800	13	220,380	256 240	– 35 860	Ord. Stk.	11¼	3½	4½	Nil
	Argentine North Eastern	753	29 3.41	ps. 131,700	– ps. 11,500	39	ps. 5,712,000	ps. 5,928,600	– ps.216,600	,,	3¾	1	2	Nil
	Bolivar	174	Mar. 1941	4,340	– 30	13	11,020	11,590	– 570	6 p.c. Deb.	6½	5	6½	N I
	Brazil	—	—	—	—	—	—	—	—	Bonds	8	5	5	Nil
	Buenos Ayres & Pacific	2,801	29 3.41	ps.1,950,000	+ ps.230,000	39	ps.54,029,000	ps. 53,951,000	+ ps.78,000	Ord. Stk.	4½	1	2	Nil
	Buenos Aires Central	190	18 1.41	$70,400	– $20,200	29	$2,477,400	$2,994,900	– $517,500	—	—	—	—	—
	Buenos Ayres Great Southern	5,082	29 3.41	ps.3,028,000	+ ps.308,000	39	ps.85,258,000	ps 93,314,000	– ps.8,056 000	Ord. Stk.	10⅜	3	4½	Nil
	Buenos Ayres Western	1,930	29 3 41	ps.1,051,000	+ ps.127,000	39	ps.29,258,000	ps 30,749 000	– ps. 1,491,000	,,	8⅜	2	3	Nil
	Central Argentine	3,700	29 3.41	ps.2,175,500	+ ps.458,000	39	ps.60,410,200	ps 69,432,800	– ps.9,022,600	,,	8¾	2	3	Nil
	Do.	—	—	—	—	—	—	—	—	Dfd.	4	½	1	Nil
	Cent. Uruguay of M. Video	972	29 3 41	24,930	+ 1,320	39	868,301	827,679	+ 40.622	Ord. Stk.	3⅜	⅛	1½	Nil
	Costa Rica	188	Dec. 1940	18 694	– 783	26	90 913	107 851	– 16.938	Stk.	23¼	14	15½	12⅞
	Dorada	70	Feb 1941	12.000	+ 1,500	9	24.200	22.700	+ 1,500	1 Mt. Db.	99	97½	98	6 1/16
	Entre Rios	810	29 3.41	ps. 205,000	– ps. 13.800	39	ps. 8.374.200	ps. 9.436 300	– ps.1.062 100	Ord. Stk.	4	⅛	1½	Nil
	Great Western of Brazil	1,016	29 3.41	9.600	– 900	13	145.400	170,000	– 24,600	Ord. Sh.	4/–	1/–	3/16	Nil
	International of Cl. Amer.	794	Jan 1941	$499.099	– $66,391	4	$499.099	$565,490	– $66,391	—	—	—	—	—
	Interoceanic of Mexico	—	—	—	—	—	—	—	—	1st Pref.	9d.	9d.	½	Nil
	La Guaira & Caracas	22¾	Mar 1941	5 520	– 1,850	13	18.995	21.975	– 2,980	—	6	4	—	—
	Leopoldina	1,918	29 3.41	25.875	+ 3,408	13	313,741	287,513	+ 26,228	Ord. Stk.	2 3/16	¼	⅜	Nil
	Mexican	483	14 2.41	ps. 305,000	– ps. 21,300	6	ps. 1,891,200	ps. 1,979,100	– ps 87.900	,,	2/11¾	3/32	⅛	Nil
	Midland of Uruguay	319	Feb. 1941	11,917	– 913	35	94 189	81,224	+ 12 965	—	—	—	—	—
	Nitrate	386	31 3 41	6,233	– 1,891	13	26,732	50,335	– 23,603	Ord. Sh.	2⅜	1½	2½	6½
	Paraguay Central	274	29 3.41	$2,891,000	– $889,000	39	$126.563,000	$125,198,000	+ $1,365,000	Pr. Li. Stk.	41	36	30½	19 1/16
	Peruvian Corporation	1,059	Mar. 1941	61.029	– 13,709	39	577,986	606.651	– 28,665	Pref.	4	1	2	Nil
	Salvador	100	25 1.41	£35.040	– £541	30	£374,369	£462,842	– £88,473	—	—	—	—	—
	San Paulo	153½	23 3.41	33,750	+ 6,367	12	408,500	410,724	– 2,224	Ord. Stk.	50	23	32	7½
	Taltal	160	Feb 1941	3.075	+ 745	35	22,510	20,130	+ 2,380	Ord. Sh.	15/1½	⅜	⅜	6 1/16
	United of Havana	1,346	29 3.41	48,699	+ 8.824	39	843.940	892.687	– 48,747	Ord. Stk.	⅜	¼	¼	Nil
	Uruguay Northern	73	Feb. 1941	891	– 315	35	9,133	8,590	+ 543	—	—	—	—	—
Canada	Canadian National	23,637	31 3.41	1,586,612	+ 412,145	13	12,939,693	10,674,823	+ 2,264,870	—	—	—	—	—
	Canadian Northern	—	—	—	—	—	—	—	– 4 p.c.	Perp. Dbs.	86	68	89	4½
	Grand Trunk	—	—	—	—	—	—	—	—	4 p.c. Gar.	105¾	95 1/16	101½	3 1/16
	Canadian Pacific	17,153	31.3.41	1,113.800	+ 391,800	13	9.082,400	7,127,600	+ 1,954,800	Ord. Stk.	9 5/16	4⅜	8	Nil
India†	Assam Bengal	1,329	30.4.40	45.187*	+ 6,529	4	135.060	120,437	+ 14,623	Ord. Stk.	99⅜	71	100	3
	Barsi Light	202	31.1.41	5,625	+ 3,052	45	134,310	106,590	+ 27,720	—	—	—	—	—
	Bengal & North Western	2,086	28.2 41	271.125	– 2,964	22	1,281.323	1,196,608	+ 84,715	Ord. Stk	283	234	295	5 7/16
	Bengal Dooars & Extension	161	Sept. 1940	14.625	+ 508	26	78.405	66,243	+ 12,162	,,	—	—	—	—
	Bengal-Nagpur	3,269	31.12.40	284,550	+ 15,859	39	6,543,848	5,895,495	+ 648,353	,,	96	83⅞	99¼	4
	Bombay, Baroda & Cl. India	2,986	31.3.41	381.225	+ 96,900	52	10.430.915	9.187.125	+ 1,243.800	,,	108	99	107½	5 5/16
	Madras & Southern Mahratta	2,939	31 1 41	192,675	+ 10,998	45	5,091,149	4,799.101	+ 292,048	,,	104	97⅞	103½	7¼
	Rohilkund & Kumaon	571	28 2 41	57,600	– 1,989	22	269.465	252.386	+ 17,079	,,	284	238	290	5½
	South Indian	2,500	10.1.40	119,489	+ 11,739	41	3,548,210	3,183,107	+ 365,103	,,	93⅜	83	96½	4
Various	Beira	204	Jan. 1941	76.256	—	17	284.761	—	—	—	—	—	—	—
	Egyptian Delta	623	20.12.40	9,626	+ 2,520	38	169,255	155,708	+ 13,547	Prf. Sh.	7/10½	⅜	⅜	Nil
	Kenya & Uganda	1,625	—	—	—	—	—	—	—	—	—	—	—	—
	Manila	—	—	—	—	—	—	—	—	B. Deb.	53	44½	47½	7⅜
	Midland of W. Australia	277	Nov. 1940	15 716	+ 4,027	22	78.885	63.495	+ 15,390	Inc. Deb.	88	80	87½	6⅝
	Nigerian	1,900	25 1 41	55,111	– 18,846	43	1,788,795	1,602,531	+ 186,264	—	—	—	—	—
	Rhodesia	2,442	Jan. 1941	491.762	—	17	1,928.021	—	—	—	—	—	—	—
	South Africa	13,287	8.2.41	703,777	+ 62,719	45	31,277,169	29,140.784	+ 2,136.385	—	—	—	—	—
	Victoria	4,774	Aug. 1940	888,289	+ 190,022	9	1,756,717	1,383,157	+ 373,560	—	—	—	—	—

Note. Yields are based on the approximate current prices and are within a fraction of ⅛ Argentine traffics are now given in pesos

† Receipts are calculated @ 1s. 6d. to the rupee